ALSO FILED AS:
JP 62167747

(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: 0 236 618
A2

(12) EUROPEAN PATENT APPLICATION

(21) Application number: 86308068.5

(22) Date of filing: 17.10.86

(51) Int. Cl.⁴: C07C 109/10 , C07C 121/52 , C07C 121/66 , C07C 125/067 , C07C 133/08 , C07C 143/02 , C07C 147/06 , C07C 149/40 , C07C 153/00 , C07C 161/02 , C07C 161/04

A request for correction of the specification has been filed pursuant to Rule 88 EPC. A decision on the request will be taken during the proceedings before the Examining Division (Guidelines for Examination in the EPO, A-V, 2.2).

(30) Priority: 21.10.85 US 789797
24.09.86 US 911177

(43) Date of publication of application:
16.09.87 Bulletin 87/38

(84) Designated Contracting States:
AT BE CH DE ES FR GB GR IT LI LU NL SE

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(54) Insecticidal N'-substituted-N,N'-diacylhydrazines.

(57) This invention is concerned with insecticidal compositions containing N'-substituted-N,N'-diacylhydrazines, methods of using such compositions and with certain of the insecticidal N'-substituted-N,N'-diacylhydrazines which are novel compounds.

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INSECTICIDAL N'-SUBSTITUTED-N,N'-DIACYLHYDRAZINES

This invention is concerned with N'-substituted-N,N'-diacylhydrazines which are useful as insecticides, compositions containing those compounds and methods of their use. The invention is also directed to certain of the disclosed hydrazines as new compounds.

The search for compounds which have a combination of excellent insecticidal activity and low undesirable toxicity is a continuing one because of factors such as the desire for compounds exhibiting greater activity, better selectivity, low undesirable environmental impact, low production cost and effectiveness against insects resistant to many known insecticides.

Compounds of the present invention are particularly suitable for controlling plant-destructive insects in crops of cultivated plants, ornamentals and forestry.

Certain hydrazine derivatives have been disclosed in the literature.

In 25 Aust. J. Chem., 523-529 (1972), several N,N'-dibenzoylhydrazine derivatives are disclosed including N'-i-propyl-; N'-n-propyl-; N'-(2-methylpropyl)-; N'-(3-methylbutyl)-; N'-benzyl-and N'-phenyl-N,N'-dibenzoylhydrazine in which one or both nitrogen atoms are alkylated or phenylated. No biological activity is disclosed for those compounds.

In 61 Helv. Chim. Acta, 1477-1510 (1978), several N,N'-dibenzoylhydrazine and hydrazide derivatives including N'-t-butyl-N-benzoyl-N'-(4'-nitrobenzoyl)hydrazine are disclosed. No biological activity is disclosed for those compounds.

In 44 J.A.C.S., 2556-2567 (1922), isopropylhydrazine $(CH_3)_2CH\text{-}NH\text{-}NH_2$, symmetrical diisopropyl hydrazine, dibenzoylisopropylhydrazine and certain derivatives are disclosed. No biological activity is disclosed for those compounds.

In 44 J.A.C.S., 1557-1564 (1972), isopropyl, menthyl and bornyl semicarbazides are disclosed. No biological activity is disclosed for those compounds.

In 48 J.A.C.S., 1030-1035 (1926), symmetrical di-methylphenylmethylhydrazine and certain related compounds including 1,2-bis-methylphenylmethyl-4-phenylsemicarbazide are disclosed. No biological activity is disclosed for those compounds.

In 27 Bull. Chem. Soc. Japan, 624-627 (1954), certain hydrazine derivatives including alpha,beta-dibenzoylphenylhydrazine are disclosed. No biological activity is disclosed for those compounds.

In J. Chem. Soc. (C), 1531-1536 (1966), N,N'-dibenzoylphenylhydrazine and N-acetyl-N'-benzoyl-p-nitrophenylhydrazine are disclosed. No biological activity is disclosed for those compounds.

In 56B Chem. Berichte, 954-962 (1923), symmetrical di-isopropylhydrazines, symmetrical diisobutyl-and certain derivatives including N,N'-diisobutyldibenzoylhydrazine are disclosed. No biological activity is disclosed for those compounds.

In 590 Annalen der Chemie , 1-36 (1954), certain N,N'-dibenzoylhydrazine derivatives are disclosed including N'-methyl-and N'-(2-phenyl)-isopropyl-N,N'-dibenzoylhydrazine. No biological activity is disclosed for those compounds.

In J. Chem. Soc., 4191-4198 (1952), N,N'-di-n-propylhydrazine, N-N'-dibenzoylhydrazine and bis-3,5-dinitrobenzoyl are disclosed. No biological activity is disclosed for those compounds.

In 32 Zhur. Obs. Khim., 2806-2809 (1962), N'-2,4-methyl-2,4-pentadiene-N,N'-dibenzoylhydrazine is disclosed. No biological activity is disclosed.

In 17 Acta. Chim. Scand., 95-102 (1963), 2-benzoylthiobenzhydrazide ($C_6H_5\text{-}CS\text{-}NHNH\text{-}CO\text{-}C_6H_5$) and certain hydrazone and hydrazine derivatives are disclosed including 1,2-dibenzoyl-benzylhydrazine. No biological activity is disclosed for those compounds.

In 25 Zhur. Obs. Khim, 1719-1723 (1955), N,N'-bis-cyclohexylhydrazine and N,N'-dibenzoylcyclohexyl-hydrazine are disclosed. No biological activity is disclosed for those compounds.

In J. Chem. Soc., 4793-4800 (1964), certain dibenzoylhydrazine derivatives are disclosed including tribenzoylhydrazine and N,N'-dibenzoylcyclohexylhydrazine. No biological activity is disclosed for those compounds.

In 36 J. Prakt. Chem., 197-201 (1967), certain dibenzoylhydrazine derivatives including N'-ethyl-; N'-n-propyl-; N'-isobutyl-; N'-neopentyl-; N'-n-heptyl-; and N'-cyclohexylmethyl-N,N'-dibenzoylhydrazines are disclosed. No Biological activity is disclosed for those compounds.

In 26 J.O.C. , 4336-4340 (1961) N'-t-butyl-N,N'-di-(t-butoxycarbonyl)hydrazide is disclosed. No biological activity is disclosed.

In 41 J.O.C., 3763-3765 (1976), N'-t -butyl-N-(phenylmethoxycarbonyl)-N'-(chlorocarbonyl)hydrazide is disclosed. No biological activity is disclosed.

In 94 J.A.C.S., 7406-7416 (1972) N'-t-butyl-N,N'-dimethoxycarbonylhydrazide is disclosed. No biological activity is disclosed.

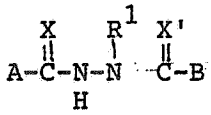
In 43 J.O.C., 808-815 (1978), N'-t-butyl-N-ethoxycarbonyl-N'-phenylaminocarbonylhydrazide and N'-t-N-ethoxycarbonyl-N'-methylaminocarbonylhydrazide are disclosed. No biological activity is disclosed for those compounds.

In 39 J. Econ. Ent., 416-417 (1946), certain N-phenyl-N'-acylhydrazines are disclosed and evaluated for their toxicity against codling moth larvae.

The novel N'-substituted-N,N'-diacylhydrazines of the present invention differ from known compounds primarily by their N'-substituent and their N,N'-diacyl substitutents.

Compounds of the present invention are also distinguished by their excellent insecticidal activity, particularly against insects of the orders Lepidoptera and Coleoptera, and most particularly against insects of the order Lepidoptera, without material adverse impact on beneficial insects.

In accordance with the present invention, there are provided insecticidal compositions and methods of using such compositions wherein the compositions comprise an agronomically acceptable carrier and, as insecticidally active ingredient, from 0.0001% to 99% by weight of the compositions of a compound of the formula:



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wherein

X and X' are the same or different O, S or NR;

R^1 is unsubstituted (C_3-C_{10}) branched alkyl or a (C_1-C_4) straight chain alkyl substituted with one or two of the same or different (C_3-C_6)cycloalkyl; preferably R^1 has no more than 10 carbon atoms;

A and B are the same or different unsubstituted or substituted naphthyl

where the substituents can be from one to three of the same or different halo; nitro; (C_1-C_4)alkoxy; (C_1-C_4)-alkyl; or amino;

unsubstituted or substituted phenyl

where the substituents can be from one to five of the same or different halo; nitro; cyano; hydroxy; (C_1 to C_6)alkyl; halo(C_1 to C_6)alkyl; cyano(C_1 to C_6)alkyl; hydroxy(C_1-to C_6)alkyl; (C_1 to C_6)alkoxy; halo(C_1 to C_6)-alkoxy; alkoxyalkyl having, independently, 1 to 6 carbon atoms in each alkyl group; alkoxyalkoxy having, independently, 1 to 6 carbon atoms in each alkyl group; -ORSR' group; -OCO_2R group; alkanoyloxyalkyl having, independently, 1 to 6 carbon atoms in each alkyl group; (C_2-C_6)alkenyl,

optionally substituted with halo, cyano, (C_1 to C_4)alkyl, or (C_1 to C_4)alkoxy;

(C_2 to C_6)alkenyloxy; (C_2 to C_6)alkenyl-carbonyl; (C_2 to C_6)alkenyl-oxycarbonyloxy; (C_2 to C_6)alkynyl,

optionally substituted with halo or (C_1 to C_4)alkyl;

-RCO_2R' group; -COR group; halo(C_1 to C_6)alkyl-carbonyl; -CO_2R group; halo (C_1 to C_6)alkoxy-carbonyl; -OCOR group; -ORCO_2 R' group; -NRR' group; -CONRR' group; (C_2 to C_6)alkenyl-carbonylamino; hydroxy-(C_1 to C_6)alkyl-aminocarbonyl; -OCONRR' group; -NRCOR' group; -NRCO_2R' group; thiocyanato; isothiocyanato; thiocyanato-(C_1 to C_6)alkyl; (C_1 to C_6)alkyl-thio; -S(O)R group; -SO_2 R group; -SO_2R group; -So_2NRR' group; -CSR group; -NRCSR' group;

unsubstituted or substituted phenyl,

where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1 to C_4)alkyl, halo(C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ'-group;

phenoxy where the phenyl ring is unsubstituted or substituted,

where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1 to C_4)alkyl, halo(C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group;

benzoyl where the phenyl ring is unsubstituted or substituted,

where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1 to C_4)alkyl, halo(C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group;

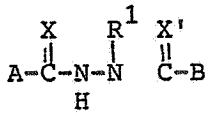
benzoyloxy(C_1 to C_6)alkyl; phenylthio(C_1 to C_4)alkyl where the phenyl ring is unsubstituted or substituted,

where the substituents can be one to three of the same or different halo, cyano, nitro (C_1 to C_4)alkyl, halo(C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group;

-CR=N-R^2 where R^2 is hydroxy, (C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, amino phenylamino, -COR, or benzoyl; (C_2 to C_6)oxiranyl; pyrrolyl; acetylthiosemicarbazone; oxazolyl, optionally substituted with 1 or 2 methyl groups; or when two adjacent positions on the phenyl ring are substituted with alkoxy groups, these groups may be joined to form, together with the carbon atoms to which they are both attached, a 5 or 6 membered

dioxolano or dioxano heterocyclic ring;
where R and R' are hydrogen or (C_1 to C_6)alkyl; Z and Z' are (C_1 to C_4) alkyl; and "amino" means -NRR';
and agronomically acceptable salts thereof.

Also in accordance with the present invention, there are provided certain novel insecticidal comounds having the formula



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wherein
X and X' are the same or different O, S or NR;
R^1 is unsubstituted (C_3-C_{10}) branched alkyl or a (C_1-C_4) straight chain alkyl substituted with one or two of the same or different (C_3-C_6)cycloalkyl; preferably R^1 has no more than 10 carbon atoms;
A and B are the same or different unsubstituted or substituted naphthyl
where the substituents can be from one to three of the same or different halo; nitro; (C_1-C_4)alkoxy; (C_1-C_6)-alkyl; or amino;
unsubstituted or substituted phenyl
where the substituents can be from one to five of the same or different halo, nitro; cyano; hydroxy; (C_1-C_6)-alkyl; halo(C_1-C_6)alkyl; cyano(C_1-C_6)alkyl; hydroxy(C_1-C_6)alkyl; (C_1-C_6)alkoxy; halo(C_1-C_6)alkoxy; alkoxyalkyl having independently 1 to 6 carbon atoms in each alkyl group; alkoxy-alkoxy having independently 1 to 6 carbon atoms in each alkyl group; -ORSR' group; -OCO_2R group; alkanoyloxyalkyl having independently 1 to 6 carbon atoms in each alkyl group; (C_2-C_6)alkenyl,
optionally substituted with halo, cyano, (C_1 to C_4)alkyl, or (C_1 to C_4)alkoxy;
(C_2 to C_6)alkenyloxy; (C_2-C_6)alkenyl-carbonyl; (C_2-C_6)alkenyl-oxycarbonyloxy; (C_2-C_6)alkynyl,
optionally substituted with halo or (C_1-C_4)alkyl;
-RCO_2R' group; -COR group; halo(C_1-C_6)alkyl-carbonyl; -CO_2R group; halo(C_1-C_6)alkoxy-carbonyl; -OCOR group; -ORCO_2R' group; -NRR' group; -CONRR' group; (C_2-C_6)alkenyl-carbonylamino; hydroxy(C_1-C_6)alkyl-aminocarbonyl; -OCONRR' group; -NRCOR' group; -NRCO_2R' group; thiocyanato; isothiocyanato; thiocyanato(C_1-C_6)alkyl; (C_1-C_6)alkyl-thio; -S(O)R group; -SO_2R group; -OSO_2R group; -SO_2NRR' group; -CSR group; -NRCSR' group;
unsubstituted or substituted phenyl,
where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, NHZ group or NZZ' group;
phenoxy where the phenyl ring is unsubstituted or substituted,
where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4) alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, NHZ group or NZZ' group;
benzoyl where the phenyl ring is unsubstituted or substituted,
where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1 to C_4)alkyl, halo-(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, NHZ group or NZZ' group;
benzoyloxy(C_1-C_6)alkyl; phenylthio(C_1-C_6)alkyl where the phenyl ring is unsubstituted or substituted,
where the substituents can be one to three of the same of different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, NHZ group or NZZ' group;
-CR=N-R^2 group where R^2 is hydroxy, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, amino, -NRR' group, phenylamino, -COR group, or benzoyl; (C_2-C_6)oxiranyl; pyrrolyl; oxazolyl optionally substituted with 1 or 2 methyl groups; acetylthiosemicarbazone; or, when two adjacent positions on the phenyl ring are substituted with alkoxy groups, these groups may be joined to form a 5 or 6 membered dioxolano or dioxano heterocyclic ring;
where R and R' are hydrogen or (C_1-C_6)alkyl; Z and Z' are (C_1 to C_4)alkyl; and "amino" means -NRR';
and agronomically acceptable salts thereof; provided that when X and X' are O, and A and B are unsubstituted phenyl, R^1 is not isopropyl (-$CH(CH_3)_2$); 2-methylpropyl (-$CH_2CH(CH_3)_2$); 3-methylbutyl (-$CH_2CH_2CH(CH_3)_2$); cyclohexylmethyl (-$CH_2C_6H_{11}$); or neopentyl (2,2-dimethylpropyl -$CH_2C(CH_3)_3$); and further provided that when X and X' are O and R^1 is t-butyl (-$C(CH_3)_3$) and A is unsubstituted phenyl, B is not 4-nitrophenyl.

Further, in accordance with the present invention, there are provided methods of using these compounds and compositions.

The term "halo" should be understood as including chloro, fluoro, bromo and iodo. The term "alkyl" by itself or as a part of another substituent, unless otherwise stated, includes straight or branched chain groups such as methyl, ethyl, n-propyl, isopropyl, n-butyl, t-butyl, isobutyl, neopentyl and the like and where indicated higher homologues and isomers such as n-octyl, isooctyl and the like. The term "haloalkyl" by itself or as part of another substituent is an alkyl group of the stated number of carbon atoms having one or more halo atoms bonded thereto such as chloromethyl, 1-or 2-bromoethyl, trifluoromethyl and the like. Analogously, "cyanoalkyl" by itself or as part of another group is an alkyl group of the stated number of carbon atoms having one ore more cyano groups bonded thereto; "haloalkoxy" by itself or as part of another group is an alkoxy group of the stated number of carbon atoms having one or more halo atoms bonded thereto such as difluoromethoxy, trifluoromethoxy, 2-fluoroethoxy, 2,2,2-trifluoroethoxy and the like. "Alkenyl" and "alkynyl" by themselves or as part of another substituent comprise straight and branched chain groups of the stated number of carbon atoms.

In another group of preferred compositions and compounds of the invention,

X, X' and R are as above defined and A and B are the same or different unsubstituted or substituted naphthyl

where the substituents can be from one to three of the same or different halo; nitro; (C_1-C_4)alkoxy; (C_1-C_4)-alkyl; or amino;

unsubstituted or substituted phenyl

where the substituents can be from one to five of the same or different halo; nitro; cyano; hydroxy; (C_1 to C_6)alkyl; halo(C_1 to C_6)alkyl; cyano(C_1 to C_6)alkyl; (C_1 to C_6)alkoxy; halo(C_1 to C_6)alkoxy; alkoxyalkyl having, independently, 1 to 6 carbon atoms in each alkyl group; alkoxyalkoxy having independently, 1 to 6 carbon atoms in each alkyl group; -OCO_2R group; (C_2-C_6)alkenyl,

optionally substituted with halo, cyano; (C_1 to C_4) alkyl, or (C_1 to C_4)alkoxy;

(C_2 to C_6)alkenyl-carbonyl; (C_2 to C_6)alkynyl,

optionally substituted with halo or (C_1 to C_4)alkyl;

-RCO_2R' group; -COR group; halo(C_1 to C_6)alkyl-carbonyl; -CO_2R group; halo(C_1 to C_6)alkoxy-carbonyl; -OCOR group; -NRR' group; -CONRR' group; -OCONRR' group; -NRCOR' group; -$NRCO_2R'$ group; thiocyanato; (C_1 to C_6)alkyl-thio; -S(O)R group; -SO_2R group; -OSO_2R group; -SO_2NRR' group; -CSR group; -NRCSR' group;

unsubstituted or substituted phenyl,

where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group;

phenoxy where the phenyl ring is unsubstituted or substituted,

where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group;

benzoyl where the phenyl ring is unsubstituted or substituted,

where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or NZZ' group;

-CR=N-R^2 where R^2 is hydroxy, (C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, amino, phenylamino, -COR, or benzoyl; or, when two adjacent positions on the phenyl ring are substituted with alkoxy groups, these groups may be joined to form, together with the carbon atoms to which they are both attached, a 5 or 6 membered dioxolano or dioxano heterocyclic ring;

where R and R' are hydrogen or (C_1 to C_6)alkyl; Z and Z' are (C_1 to C_4)alkyl; and "amino" means -NRR';

and agronomically acceptable salts thereof.

Typical compounds within the scope of the present invention include, but are not limited to:

N'-t-butyl-N,N'-bis(4-chlorobenzoyl)hydrazine
N'-t-butyl-N,N'-bis(3-chlorobenzoyl)hydrazine
N'-t-butyl-N,N'-dibenzoylhydrazine
N'-t-butyl-N,N'-bis(3,4-dichlorobenzoyl)hydrazine
N'-t-butyl-N,N'-bis(4-toluoyl)hydrazine
N'-t-butyl-N,N'-bis(4-nitrobenzoyl)hydrazine
N'-t-butyl-N,N'-bis(4-anisoyl)hydrazine
N'-t-butyl-N,N'-bis(3-nitrobenzoyl)hydrazine
N'-t-butyl-N,N'-bis(3-anisoyl)hydrazine
N'-t-butyl-N,N'-bis(2-nitrobenzoyl)hydrazine
N'-t-butyl-N,N'-bis(2-chlorobenzoyl)hydrazine
N'-t-butyl-N,N'-bis(2-anisoyl)hydrazine
N'-t-butyl-N-(4-toluoyl)-N'-benzoylhydrazine

N'-t-butyl-N,N'-bis(4-cyanobenzoyl)hydrazine
N'-t-butyl-N-(4-toluoyl)-N'-(4-chlorobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(4-chlorobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(3-chlorobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(2-chlorobenzoyl)hydrazine
N'-t-butyl-N,N'-bis(3-toluoyl)hydrazine
N'-t-butyl-N,N'-bis(2-toluoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(4-toluoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(3-toluoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(2-toluoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(4-anisoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(3-anisoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(2-anisoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(4-n-butylbenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(4-cyanobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(4-nitrobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(3-nitrobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(2-nitrobenzoyl)hydrazine
N'-t-butyl-N,N'-bis(4-t-butylbenzoyl)hydrazine
N'-t -butyl-N-(4-toluoyl)-N'-(3,4-dichlorobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(4-fluorobenzoyl)hydrazine
N'-t -butyl-N-benzoyl-N'-(3-fluorobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(2-fluorobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(2,4-dichlorobenzoyl)hydrazine
N'-isopropyl-N,N'-dibenzoylhydrazine
N'-t-butyl-N-benzoyl-N'-(4-trifluoromethylbenzoyl)hydrazine
N'-t -butyl-N-benzoyl-N'-(3-trifluoromethylbenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(2-trifluoromethybenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(2,5-difluorobenzoyl)hydrazine
N'-(2,2-dimethylethyl)-N,N'-dibenzoylhydrazine
N'-t -butyl-N-benzoyl-N'-(3-cyanobenzoyl)hydrazine
N'-(1-methylpropyl)-N,N'-dibenzoylhydrazine
N'-t-butyl-N-benzoyl-N'-(2,6-difluorobenzoyl)hydrazine
N'-t-butyl-N-(4-chlorobenzoyl)-N'-benzoylhydrazine
N'-t-butyl-N-benzoyl-N'-(3,4-dichlorobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(3,5-dichlorobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(2,6-dichlorobenzoyl)hydrazine
N'-t-butyl-N-(4-t-butylbenzoyl)-N'-benzoylhydrazine
N'-t-butyl-N-(2-chlorobenzoyl)-N'-benzoylhydrazine
N'-t -butyl-N-(1-naphthoyl)-N'-benzoylhydrazine
N'-t-butyl-N,N'-dinaphthoylhydrazine
N'-t-butyl-N-(3-chlorobenzoyl)-N'-benzoylhydrazine
N'-t-butyl-N-(4-chlorobenzoyl)-N'-(3,4-dichlorobenzoyl)hydrazine
N'-t -butyl-N-(2-chlorobenzoyl)-N'-(3,4-dichlorobenzoyl) hydrazine
N'-t-butyl-N-(2-toluoyl)-N'-benzoylhydrazine
N'-t -butyl-N-benzoyl-N'-(2-chloro-4-nitrobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(3,5-dinitrobenzoyl)hydrazine
N'-t -butyl-N-benzoyl-N'-(2,3-dichlorobenzoyl)hydrazine
N'-(1,2,2-trimethylethyl)-N,N'-dibenzoylhydrazine
N'-t-butyl-N-benzoyl-N'-(2-chloro-5-methylbenzoyl)hydrazine
N'-t -butyl-N-benzoyl-N'-(3,5-dimethylbenzoyl)hydrazine
N'-t -butyl-N-benzoyl-N'-(2-nitro-5-methylbenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(2-methyl-3-chlorobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(3-chloro-4-methylbenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(2-nitro-3-chlorobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(3-methoxy-4-nitrobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(2-nitro-3-methoxybenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(2,4-dinitrobenzoyl)hydrazine

N'-t-butyl-N-(4-chlorobenzoyl)-N'-(2-chlorobenzoyl)hydrazine
N'-t-butyl-N-(4-chlorobenzoyl)-N'-(3-chlorobenzoyl) hydrazine
N'-t-butyl-N-(4-chlorobenzoyl)-N'-(4-toluoyl)hydrazine
N'-t-butyl-N-(4-chlorobenzoyl)-N'-(3,5-dichlorobenzoyl)hydrazine
N'-t -butyl-N-(4-chlorobenzoyl)-N'-(2,4-dichlorobenzoyl)hydrazine
N'-t-butyl-N-(4-chlorobenzoyl)-N'-(4-trifluoromethylbenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(4-methanesulfonyloxybenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(4-isopropylbenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(2-acetoxybenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(4-ethylbenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(2-bromobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(4-hydroxybenzoyl)hydrazine
N'-t -butyl-N-(4-toluoyl)-N'-(2-toluoyl)hydrazine
N'-t-butyl-N-(4-toluoyl)-N'-(3-toluoyl)hydrazine
N'-t-butyl-N-(4-toluoyl)-N'-(2,4-dichlorobenzoyl)hydrazine
N'-t-butyl-N-(4-toluoyl)-N'-(3,5-dichlorobenzoyl)hydrazine
N'-t-butyl-N-(4-toluoyl)-N'-(2-chlorobenzoyl)hydrazine
N'-t-butyl-N-(4-toluoyl)-N'-(4-fluorobenzoyl)hydrazine
N'-t-butyl-N-(4-toluoyl)-N'-(4-trifluoromethylbenzoyl)hydrazine
N'-t -butyl-N-(4-toluoyl)-N'-(3-chlorobenzoyl)hydrazine
N'-t -butyl-N-(4-chlorobenzoyl)-N'-(3-chlorobenzoyl)hydrazine
N'-t-butyl-N-(4-chlorobenzoyl)-N'-(4-chloromethylbenzoyl)hydrazine
N'-t-butyl-N-(4-chlorobenzoyl)-N'-(2-toluoyl)hydrazine
N'-t-butyl-N-(4-chlorobenzoyl)-N'-(3-anisoyl)hydrazine
N'-t-butyl-N-(4-chlorobenzoyl)-N'-(3-toluoyl)hydrazine
N'-t-butyl-N,N'-bis(4-fluorobenzoyl)hydrazine
N'-t-butyl-N,N'-bis(3-fluorobenzoyl)hydrazine
N'-t-butyl-N,N'-bis(2-fluorobenzoyl)hydrazine
N'-t-butyl-N,N'-bis(2-naphthoyl)hydrazine
N'-t-butyl-N-(4-isobutylbenzoyl)-N'-(2-nitrobenzoyl)hydrazine
N'-t -butyl-N-(2-bromobenzoyl)-N'-(4-ethenylbenzoyl)hydrazine
N'-t-butyl-N-(4-toluoyl)-N'-(4-ethynylbenzoyl)hydrazine
N'-t-butyl-N-[4-(1-hydroxy-2-propynyl)benzoyl]-N'-(3,4-methylenedioxybenzoyl)hydrazine
N'-t-butyl-N-(3-phenoxybenzoyl)-N'-(2-bromobenzoyl)hydrazine
N'-t -butyl-N-(2,4-dichlorobenzoyl)-N'-(4-trifluoromethoxybenzoyl)hydrazine
N'-t-butyl-N-(4-ethylbenzoyl)-N'-(2-difluoromethoxy-4-chlorobenzoyl)hydrazine
N'-isopropyl-N'-(4-chloro-2-bromobenzoyl)-N-benzoyl)hydrazine
N'-(2,2-dimethylethyl)-N-(3-bromomethylbenzoyl)-N'-(4-isopropyloxybenzoyl)hydrazine
N'-t-butyl-N-(4-chloromethylbenzoyl)-N'-(2-carboxybenzoyl)hydrazine
N'-(1-methylpropyl)-N-(4-carboxybenzoyl)-N'-(3,4,5-trichlorobenzoyl)hydrazine
N'-t-butyl-N-(4-propanoylbenzoyl)-N'-[4-(4-pentenyl)-benzoyl]hydrazine
N'-(1,2,2,-trimethylpropyl)-N-[2-(ethoxy-1-ethoxyl)-benzoyl]-N'-[4-(2-ethylbutanoyl)-benzoyl]hydrazine
N'-t-butyl-N-(6-bromo-2-naphthoyl)-N'-(4-benzoylbenzoyl)hydrazine
N'-isopropyl-N-(4-(2[pentynoyl)benzoyl)-N'-(3-nitrobenzoyl)hydrazine
N'-(2,2-dimethylpropyl)-N-(4-t-butyloxycarbonylbenzoyl)-N'-(4-chloro-3-trifluoromethoxybenzoyl)hydrazine
N'-t-butyl-N-(2-benzyloxycarbonylbenzoyl)-N'-(2-methoxy-4-bromobenzoyl)hydrazine
N'-t-butyl-N-(4-(2,2,2-trifluoroethoxycarbonyl)-3-methyl-benzoyl)-N'-(2,4-dichloro-3-hydroxybenzoyl)hydrazine
N'-isopropyl-N-(3-propanoyloxybenzoyl)-N'-(2,5-dibromobenzoyl)hydrazine
N'-(1,2,2,-trimethylpropyl)-N-(4-n-propylbenzoyl)-N'-(3-ethoxycarbonyloxybenzoyl)hydrazine
N'-t -butyl-N-(3,5-dimethylbenzoyl)-N'-(4-t-butylcarbonyl-oxybenzoyl)hydrazine
N'-(1-methylpropyl)-N-(2-aminobenzoyl)-N'-(3,4,-dichlorobenzoyl)hydrazine
N'-t-butyl-N-(4-chloro-2-trifluoromethoxybenzoyl)-N'-(4-methylaminobenzoyl)hydrazine
N'-t-butyl-N-(4-dimethylaminobenzoyl)-N'-(4-acetylaminobenzoyl)hydrazine
N'-t-butyl-N-(2-methanesulfonylaminobenzoyl)-N'(2-chloro-3-(1-(formylidene)-2-phenylhydrazine)benzoyl)-hydrazine
N'-(1-methylpropyl)-N-(2-aminocarbonylbenzoyl)-N'-(2-chloro-4-ethylaminocarbonylbenzoyl)hydrazine
N'-isopropyl-N-(4-methyl-3-dimethylaminocarbonylbenzoyl)-N'-(4-trifluoromethylbenzoyl)hydrazine
N'-(1,2,2-trimethylpropyl)-N-(4-trifluoromethoxy-2-chlorobenzoyl)-N'-(4-methoxycarbonylaminobenzoyl)-

hydrazine
N'-t-butyl-N-(2-carboxymethylbenzoyl)-N'-(4-dimethylaminocarbonyloxybenzoyl)hydrazine
N'-t-butyl-N-(3-methylaminocarbonyloxybenzoyl)-N'-(2-chloro-4-(N-acetoxyaminocarbonyloxy)-benzoylhydrazine
N'-isopropyl-N-(4-methoxy-3-bromobenzoyl)-N'-(4-sulfhydrylbenzoyl)hydrazine
N'-(2,2-dimethylpropyl)-N-(2-methylthiobenzoyl)-N'-(2-chloro-4-(1,3-dioxolano-2-yl)benzoyl)hydrazine
N'-t-butyl-N-(3-methanesulfinylbenzoyl)-N'-(3,4,5-trimethoxybenzoyl)hydrazine
N'-(1,2,2-trimethylpropyl)-N-(3-phenylsulfonylbenzoyl)-N'-(3,4-dichlorobenzoyl(hydrazine
N'-t-butyl-N-(2-iodobenzoyl)-N'-(4-aminosulfonyloxybenzoyl)hydrazine
N'-(1,2,2-trimethylpropyl)-N-(4-acetylthiobenzoyl)-N'-(3,4-dichlorobenzoyl)hydrazine
N'-t-butyl-N-(3-methylthiocarbonylbenzoyl)-N'-(4-pentafluoroethoxybenzoyl)hydrazine
N'-t-butyl-N-(pentafluorobenzoyl)-N'-(4-phenylaminobenzoyl)hydrazine
N'-t-butyl-N-(5-chlorophenylbenzoyl)-N'-(3-chloro-4-acetylaminobenzoyl)hydrazine
N'-(1-methylpropy)-N-(4-fluoro-3-bromochloromethylbenzoyl)-N'-(3-cyanomethylbenzoyl)hydrazine
N'-t-butyl-N-((4-n-propyl)thiobenzoyl)-N'-(3,4-dichlorobenzoyl)hydrazine
N'-t-butyl-N-(4-chloromethylcarbonylbenzoyl)-N'-(2-bromobenzoyl)hydrazine
N'-t-butyl-N-(3-trichloroethenylbenzoyl)-N'-(4-fluorobenzoyl)hydrazine
N'-isopropyl-N-(4-(1,3-dimethylbutyl)benzoyl)-N'-(2-nitrobenzoyl)hydrazine
N'-isopropyl-N-(2,6-dichlorobenzoyl)-N'-(4-trifluoromethoxybenzoyl)hydrazine
N'-t-butyl-(2,3,4-trichlorobenzoyl)-N'-(2-nitrobenzoyl)hydrazine
N'-t -butyl-N-benzoyl-N'-(4-bromobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(3-bromobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(4-nbutylbenzoyl)hydrazine
N'-t-butyl-N-(4-ethylbenzoyl)-N'-benzoyl hydrazine
N'-t -butyl-N-(3,4-dichlorobenzoyl)-N'-benzoyl hydrazine
N'-t -butyl-N-benzoyl-N'-(4-acetylbenzoyl)hydrazine
N'-(2,2-dimethylpropyl)-N-benzoyl-N'-(2-bromobenzoyl)hydrazine
N'-(2,2-dimethylpropyl)-N-benzoyl-N'-(2-nitrobenzoyl)hydrazine
N'-(2,2-dimethylpropyl)-N-benzoyl-N'-(2-methoxybenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(2-iodobenzoyl)hydrazine
N'-(2-methylpropyl)-N,N'-dibenzoylhydrazine
N'-isopropyl-N-benzoyl-N'-(2-bromobenzoyl)hydrazine
N'-isopropyl-N-benzoyl-N'-(3,4-dichlorobenzoyl)hydrazine
N'-t -butyl-N-benzoyl-N'-(4-phenoxybenzoyl)hydrazine
N'-t -butyl-N-(4-trifluoromethylbenzoyl)-N'-benzoylhydrazine
N'-t-butyl-N-(4-trifluoromethylbenzoyl)-N'-(3,4-dichlorobenzoyl)hydrazine
N'-dicyclopropylmethyl-N,N'-dibenzoylhydrazine
N'-t-butyl-N-benzoyl-N'-(2-chloro-4-bromobenzoyl)hydrazine
N'-t-butyl-N-((4-chloro)thiobenzoyl)-N'-benzoylhydrazine
N'-t-butyl-N-benzoyl-N'-(thiobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(4-phenylbenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(3,4,5-trimethoxybenzoyl)hydrazine
N'-(1,2,2-trimethylpropyl)-N-benzoyl-N'-(2-nitrobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(3-cyanothiomethylbenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(3-cyanomethylbenzoyl)hydrazine
N'-(1,2,2-trimethylpropyl)-N,N'-dibenzoylhydrazine N'-(diisopropylmethyl)-N,N'-dibenzoylhydrazine
N'-(1-cyclopropylethyl)-N,N'-dibenzoylhydrazine
N'-t-butyl-N-benzoyl-N'-(4-n-butylbenzoyl)hydrazine
N'-t-butyl-N-(4-ethylbenzoyl)-N'-(3-toluoyl)hydrazine
N'-t -butyl-N-(4-ethylbenzoyl)-N'-(4-chlorobenzoyl)hydrazine
N'-t-butyl-N-(4-ethylbenzoyl)-N'-(2-nitrobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(3-toluoyl)hydrazine
N'-t-butyl-N-(4-ethylbenzoyl)-N'-(3-bromobenzoyl)hydrazine
N'-t-butyl-N-(4-ethylbenzoyl)-N'-(2-iodobenzoyl)hydrazine
N'-(1,2,2-trimethylpropyl)-N-benzoyl-N'-(2-bromobenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(4-carbomethoxybenzoyl)hydrazine
N'-t-butyl-N-(2-bromobenzoyl)-N'-benzoylhydrazine
N'-t-butyl-N-(2-trifluoromethylbenzoyl)-N'-benzoylhydrazine

N'-t-butyl-N-benzoyl-N'-(3-iodobenzoyl)hydrazine
N'-t -butyl-N-benzoyl-N'-(2-ethylbenzoyl)hydrazine
N'-t-butyl-N-benzoyl-N'-(3-methoxymethoxybenzoyl)hydrazine
N,'-dibenzoyl-N'-(1-cyclohexylethyl)hydrazine
N-benzoyl-N'-t -N'-(4-allyloxybenzoyl)hydrazine
N,N'-bis(4-phenylbenzoyl)-N'-t-butylhydrazine
N-benzoyl-N'-t-butyl-N'-(4-(4-trifluoromethyl-2-chlorophenyl)-2-nitrobenzoyl)hydrazine
N-(4-(4-trifluoromethyl-2-chlorophenyl)-2-nitrobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2-benzoyloxymethylbenzoyl)-N'-t -butyl-N'-benzoylhydrazine
N-benzoyl-N'-t-butyl-N'-(4-methanesulfonylbenzoyl)hydrazine
N-benzoyl-N'-t -butyl-N'-(4-methylthiobenzoyl)hydrazine
N,N-dibenzoyl-N'-(1-cyclohexylethyl)hydrazine
N-benzoyl-N'-t -butyl-N'-(4-allyloxybenzoyl)hydrazine
N,N'-bis(4-phenylbenzoyl)-N'-t-butylhydrazine
N-benzoyl-N'-t-butyl-N'-(4-(4-trifluoromethyl-2-chlorophenyl)-2-nitrobenzoyl)hydrazine
N-(4-(4-trifluoromethyl-2-chlorophenyl)-2-nitrobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2-benzoyloxymethylbenzoyl)-N'-t -N'-benzoylhydrazine
N-benzoyl-N'-t-butyl-N'-(4-methanesulfonylbenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(4-methylthiobenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(2-hydroxybenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(3-bromo-4-methylbenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(3-methyl-4-bromobenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(2,4-dibromobenzoyl)hydrazine
N-benzoyl-N'-isopropyl-N'-(2,6-dichlorobenzoyl)hydrazine
N-benzoyl-N'-iospropyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-benzoyl-N'-(1,2,2-trimethylpropyl)-N'-(4-cyanobenzoyl)hydrazine
N-benzoyl-N'-isopropyl-N'-(4-ethylbenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(3-(4-methylphenylthiomethyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(4-phenoxybenzoyl)hydrazine N-benzoyl-N'-t -butyl-N'-(4-methoxycarbonyloxymethylbenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(4-hydroxybenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(4-formylbenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(4-carboxybenzoyl)hydrazine
N-benzoyl-N'-(1,2,2-trimethylpropyl)-N'-(2-hydroxybenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(4-(2,2-dichlorovinyl)benzoyl)hydrazine
N-benzoyl-N'-t-N'-(2-benzoyloxybenzoyl)hydrazine
N-3,4-dimethoxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N,N'-bis(2-chloromethylbenzoyl)-N'-t-butylhydrazine
N-(2-chloromethylbenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-n-propylbenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2-nitrobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2-methyl-5-trifluoromethylbenzoyl)-N'-t-butyl-N'-(2-toluoyl)hydrazine
N,N'-bis(2-bromobenzoyl)-N'-t-butylhydrazine
N-(4-toluoyl)-N'-t-butyl-N'-(3-ethylbenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'(4-n-propylbenzoyl)hydrazine
N-(4-toluoyl)-N'-t-butyl-N'-(3-bromobenzoyl)hydrazine
N-(4-toluoyl)-N'-t-butyl-N'-(3-5-dimethylbenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(4-iodobenzoyl)hydrazine
N-(4-toluoyl)-N'-t-butyl-N'-(4-ethylbenzoyl)hydrazine
N,N'-bis(4-ethylbenzoyl)-N'-t -butylhydrazine
N-(4-toluoyl)-N'-t-N'-(3-ethylbenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(2-isopropylbenzoyl)hydrazine
N-(3-ethylbenzoyl)-N'-t -butyl-N'-benzoylhydrazine
N-benzoyl-N'-(1,2,2-trimethylpropyl)-N'-(3-nitrobenzoyl)hydrazine
N-benzoyl-N'-(2,2-dimethylpropyl)-N'-(3-nitrobenzoyl)hydrazine
N-benzoyl-N'-(2,2-dimethylpropyl)-N'-(3-toluoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(3,.4-dichlorobenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine

N-(4-heptylbenzoyl)-N'-t -butyl-N'-(4-chlorobenzoyl)hydrazine
N-(4-n-propylbenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(4-methoxybenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(4-methoxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2-chlorobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2-chlorobenzoyl)-N'-t-butyl-N'-(2-nitrobenzoyl)hydrazine
N-(2-chlorobenzoyl)-N'-t-N'-(4-toluoyl)hydrazine
N-(2-chlorobenzoyl)-N'-t-butyl-N'-(4-ethylbenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t -butyl-N'-(3-methyl-6-chlorobenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(3-acetyloxybenzoyl)hydrazine
N-benzoyl-N'-t -butyl-N'-(2-hydroxylbenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(2-nitro-3-methylbenzoyl)hydrazine
N-(4-methoxybenzoyl) -N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(4-methoxybenzoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(2-chlorobenzoyl)-N'-t -butyl-N'-(2,6-dichlorobenzoyl)hydrazine
N-(2-chlorobenzoyl)-N'-t-butyl-N'-(2-bromobenzoyl)hydrazine
N-(2-chlorobenzoyl)-N'-t-butyl-N'-(2,4-difluorobenzoyl)hydrazine
N-(2-chlorobenzoyl)-N'-t -butyl-N'-(4-methoxybenzoyl)hydrazine
N-(2-chlorobenzoyl)-N'-t-butyl-N'-(2-methylbenzoyl)hydrazine
N-(2-fluorobenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(2,4-dichlorobenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(2,4-dichlorobenzoyl)-N'-t -butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(2,4-dichlorobenzoyl)-N'-t-butyl-N'-(3-methoxybenzoyl)hydrazine
N-(2,4-dichlorobenzoyl)-N'-t-butyl-N'-(3-chlorobenzoyl)hydrazine
N-(2,4-dichlorobenzoyl)-N'-t-butyl-N'-(2-trifluoromethylbenzoyl)hydrazine
N-(2,4-dichlorobenzoyl)-N'-t-butyl-N'-(3-trifluoromethylbenzoyl)hydrazine
N-(2,4-dichlorobenzoyl)-N'-t-butyl-N'-(4-trifluoromethylbenzoyl)hydrazine
N-(3-toluoyl)-N'-t -butyl-N'-benzoylhydrazine
N-(3-nitrobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2,6-dichlorobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2,4-difluorobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2-chlorobenzoyl)-N'-t-butyl-N'-(4-cyanobenzoyl)hydrazine
N-(2-chlorobenzoyl)-N'-t-butyl-N'-(4-fluorobenzoyl)hydrazine
N-(2-chlorobenzoyl)-N'-t-butyl-N'-(4-bromobenzoyl)hydrazine
N-(2-chlorobenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(2-chlorobenzoyl)-N'-t -butyl-N'-(2-methoxybenzoyl)hydrazine
N-(2-chlorobenzoyl)-N'-t-butyl-N'-(4-nitrobenzoyl)hydrazine
N-(2-chlorobenzoyl)-N'-t-butyl-N'-(2-fluorobenzoyl)hydrazine
N-(2-chlorobenzoyl)-N'-t-butyl-N'-(2,6-dichlorobenzoyl)hydrazine
N-(4-nitrobenzoyl)-N'-t -butyl-N'-benzoylhydrazine
N-(4-cyanobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N,N'-bis(3-methoxybenzoyl)-N'-t-butylhydrazine
N-(3-methoxybenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(3-methoxybenzoyl)-N'-t -butyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-(2-methoxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2-methoxybenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2-methoxybenzoyl)-N'-t-butyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-(2-methoxybenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(2-methoxybenzoyl)-N'-t-butyl-N'-(2-nitrobenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(4-trifluoromethoxybenzoyl)hydrazine
N-(4-trifluoromethoxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-trifluoromethoxybenzoyl)-N'-t -butyl-N'-(3-toluoyl)hydrazine
N-(4-trifluoromethoxybenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(4-trifluoromethoxybenzoyl)-N'-t-butyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-(4-trifluoromethylbenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(4-trifluoromethylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N,N'-dibenzoyl-N'-(1,1-dimethylpentyl)hydrazine

N-(4-ethoxybenzoyl)-N'-t-butyl-N'(3-toluoyl)hydrazine
N-(4-ethoxybenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(4-ethoxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(2-nitro-4-chlorobenzoyl)hydrazine
N-(4-methoxy-3-chlorobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-methylthiobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-n-butoxybenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(2-methylthiobenzoyl)-N'-t -butyl-N'-benzoylhydrazine
N-(2-nitro-4-chlorobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N,N'-bis(2-nitro-4-chlorobenzoyl)-N'-t-butylhydrazine
N-(2-nitro-4-chlorobenzoyl)-N'-t-butyl-N'-(4-t-butylbenzoyl)hydrazine
N-(2-nitro-4-chlorobenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(4-toluoyl)-N'-t-butyl-N'-(3-chloro-6-methylbenzoyl)hydrazine
N,N'-bis(2,6-difluorobenzoyl)-N'-t-butylhydrazine
N-(4-phenoxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-phenoxybenzoyl)-N'-t-butyl-N'-(4-toluoyl)hydrazine
N-(4-n-butylbenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-n-butylbenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(4-isopropylbenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-isopropylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(4-hydroxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-cyanobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-cyanobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2-methyl-4-chlorobenzoyl)-N'-t -butyl-N'-benzoylhydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(4-trifluoromethoxybenzoyl)hydrazine
N-benzoyl-N'-t -butyl-N'-(2,3,4,5,6-pentafluorobenzoyl)hydrazine
N-(2,3,4,5,6-pentafluorobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-cyanobenzoyl)-N'-t-butyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-(2-methyl-4-chlorobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(4-trifluoromethylbenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2-methyl-4-chlorobenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(3-vinylbenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(3-vinylbenzoyl)hydrazine
N-(4-trifluoromethylbenzoyl)-N'-t-butyl-N'-(3-vinylbenzoyl)hydrazine
N-(4-hydroxybenzoyl)-N'-t -butyl-N'-(3-toluoyl)hydrazine
N-(4-allyloxybenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(4-n-propylbenzoyl)-N'-t-butyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-(4-n-butylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N,N'-bis(4-vinylbenzoyl)-N'-t-butylhydrazine
N-(4-vinylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2,6-difluorobenzoyl)-N'-t-butyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-(2,6-difluorobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2-N,N'-diethylaminoethylbenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N,N'-dibenzoyl-N'-(1,1-dimethylpropyl)hydrazine
N-(4-chlorobenzoyl)-N'-t-butyl-N'-(2-bromobenzoyl)hydrazine
N,N'-bis(3-toluoyl)-N'-(1,1-dimethylpropyl)hydrazine
N,N'-bis(2-bromobenzoyl)-N'-(1,1-dimethylpropyl)hydrazine
N-(4-chlorobenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(3-methylbenzoyl)-N'-t -butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(4-chlorobenzoyl)-N'-t-butyl-N'-(4-fluorobenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(4-vinylbenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(4-acetoxybenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(3,5-dimethylbenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(3,5-dimethylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(3,5-dimethylbenzoyl)-N'-t-butyl-N'-(4-ethylbenzoyl)hydrazine
N,N'-(4-(1-propenylbenzoyl))-N'-t-butylhydrazine
N-(4-isopropylbenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine

N-(4-isopropylbenzoyl)-N'-t-butyl-N'-(2-bromobenzoyl)hydrazine
N-(3-chloro-4-methylbenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(3-chloro-4-methylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(3-chloro-4-methylbenzoyl)-N'-t -butyl-N'-(4-chlorobenzoyl)hydrazine
N-(3-chloro-4-methylbenzoyl)-N'-t-butyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-(1,1-dimethylpropyl)-N'-(2-nitrobenzoyl)hydrazine
N-(2,6-difluorobenzoyl)-N'-t-butyl-N'-(2-chlorobenzoyl)hydrazine
N-(2,6-difluorobenzoyl)-N'-t -butyl-N'-(3-chlorobenzoyl)hydrazine
N-(2,6-difluorobenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(2,6-difluorobenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-(1,1-dimethylpropyl)-N'-(3,5-dimethylbenzoyl)hydrazine
N-(3-trifluoromethylbenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(3-trifluoromethylbenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-thiobenzoyl-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-thiobenzoyl-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2-nitro-3-methoxybenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(3-bromo-4-methylbenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-chlorobenzoyl)-N'-t -butyl-N'-(4-methoxycarbonylbenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(4-methoxycarbonylbenzoyl)hydrazine
N-benzoyl-N'-t -butyl-N'-(3-aminobenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(2-aminobenzoyl)hydrazine
N-(4-fluorobenzoyl)-N'-t -butyl-N'-benzoylhydrazine
N-(4-toluoyl)-N'-t-butyl-N'-(4-methoxycarbonylbenzoyl)hydrazine
N-(3-hydroxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(3-allyloxybenzoyl-N'-t-butyl-N'-benzoylhydrazine
N-(4-toluoyl)-N'-(1,2,2-trimethylpropyl)-N'-(3,5-dimethylbenzoyl)hydrazine
N-(4-toluoyl)-N'-(1,2,2-trimethylpropyl-N'-(2-nitro-3-methylbenzoyl)hydrazine
N-(4-toluoyl-N'-(1,2,2-trimethylpropyl)-N'-(2-nitro-5-methylbenzoyl)hydrazine
N-(4-toluoyl)-N'-(1,2,2-trimethylpropyl)-N'-(2-iodobenzoyl)hydrazine
N-(4-chlorobenzoyl)-N'-t-butyl-N'-(2-fluorobenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t -butyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(2-fluorobenzoyl)hydrazine
N-(4-N,N-dimethylaminocarbonyloxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-vinyloxycarbonyloxybenzoyl)-N'-t -butyl-N'-benzoylhydrazine
N-(4-methoxycarbonyl)-N'-t -butyl-N'-(4-chlorobenzoylhydrazine
N-(4-methoxycarbonyl-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(4-methoxycarbonyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(4-carboxybenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2-amino-3-methylbenzoyl)-N'-t -butyl-N'-(3-toluoyl)hydrazine
N-(4-aminobenzoyl)-N'-t -butyl-N'-(4-chlorobenzoyl)hydrazine
N-(4-methoxycarbonylaminobenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(4-acetylaminobenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(3-methoxy-2-acetylamino)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(3-phenoxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(3-phenoxybenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(4-acetylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(4-methoxymethoxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-dimethylaminocarbonyloxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-methoxycarbonylmethoxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-acetyloxymethylbenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-thiocyanatomethylbenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-hydroxymethylbenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N,N'-bis(4-bromobenzoyl)-N'-t-butylhydrazine
N-(4-methylthiomethoxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-isobutyloxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-cyanomethylbenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-(1,2-epoxypropyl)benzoyl)-N'-t -butyl-N'-benzoylhydrazine
N-(4-acetylsemicarbazonebenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine

N-(4-phenylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(3-cyanobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(3-aminobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(4-(2-hydroxy-1,1-dimethylethylaminocarbonyl)benzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(4-(2-hydroxyethyl)benzoyl)-N'-t -butyl-N'-(3-toluoyl)hydrazine
N-(3-methacrolyaminobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(3-carboxybenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(3-chloromethylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(2,3-dimethylbenzoyl)hydrazine
N-(4-toluoyl)-N'-t-butyl-N'-(2,3-dimethylbenzoyl)hydrazine
N-(4-toluoyl)-N'-(1,2,2-trimethylpropyl)-N'-(2-toluoyl)hydrazine
N-(4-toluoyl)-N'-(1,2,2-trimethylpropyl)-N'-(2-trifluoromethylbenzoyl)hydrazine
N-(4-toluoyl)-N'-(1,2,2-trimethylpropyl)-N'-benzoylhydrazine
N-(4-methoxymethoxybenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(4-(1-methylethenyl)benzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(1-naphthoyl)hydrazine
N-(1-naphthoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(4-isothiocyanatobenzoyl -N'-(3-toluoyl)hydrazine
N,N'-bis(3,5-dimethylbenzoyl)-N'-t-butylhydrazine
N,N'-bis(2,4-dichlorobenzoyl)-N'-t-butylhydrazine
N-(2-fluorobenzoyl)-N'-t-butyl-N'-(2-bromobenzoyl)hydrazine
N-(2-fluorobenzoyl)-N'-t -butyl-N'-(3-toluoyl)hydrazine
N,N'-bis(2,3-dimethylbenzoyl)-N'-t-butylhydrazine
N-(2-fluorobenzoyl)-N'-t-butyl-N'-(2-nitrobenzoyl)hydrazine
N-(2-fluorobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2-methyl-3-chlorobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2-methyl-3-chlorobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(4-toluoyl)-N'-(1,2,2,-trimethylpropyl)N'-(3,5-dimethylbenzoylhydrazine
N-(4-toluoyl)-N'-(1,2,2-trimethylpropyl)-N'-(3,4-dichlorobenzoyl)hydrazine
N-(4-bromobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2,3-dichlorobenzoyl)-N'-t-butyl-N'-(2-bromobenzoyl)hydrazine
N-(2,3-dichlorobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2-fluorobenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2,3-dichlorobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-benzoyl-N'-t -butyl-N'-(2-naphthoyl)hydrazine
N-(2-naphthoyl)-N'-t -butyl-N'-benzoylhydrazine
N-benzoyl-N'-t-butyl-N'-(4-trifluoromethoxybenzoyl)hydrazine
N-(4-isothiocyanatobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2,6-difluorobenzoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(2,6-difluorobenzoyl)-N'-t-butyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-(4-toluoyl)-N'-t-butyl-N'-(3,5-trifluoromethylbenzoyl)hydrazine
N-benzoyl-N'-t -butyl-N'-(3,5-trifluoromethylbenzoyl)hydrazine
N-(4-toluoyl)-N'-(1,2-dimethyl-3-ethylbutyl)-N'-benzoylhydrazine
N-(4-toluoyl)-N'(1-2,-dimethyl-3-ethylbutyl)-N'-(3,5-dimethylbenzoyl)hydrazine
N-(4-toluoyl)-N'-(1,2,2-trimethylpropyl)-N'-(3,5-dimethylbenzoyl)hydrazine
N-(4-toluoyl)-N'-(1,2,2-trimethylpropyl)-N'-(2-nitro-5-methylbenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(3-chloro-4-fluorobenzoyl)hydrazine
N-(4-chlorobenzoyl)-N'-t-butyl-N'-(3-chloro-4-fluorobenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(4-chlorobenzoyl)-N'-t-butyl-N'-(3,5-trifluoromethylbenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-(4-toluoyl)-N'-t-butyl-N'-(2-methyl-3-chlorobenzoyl)hydrazine
N-(3-chloro-4-fluorobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2,6-dimethylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2,6-dimethylbenzoyl)-N'-t-butyl-N'-(3,4-dimethylbenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(2-bromobenzoyl)hydrazine

N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(3-chlorobenzoyl)hydrazine
N-(3-trifluoromethoxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(3-trifluoromethoxybenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(4-ethoxycarbonylmethylbenzoyl)-N'-t-butyl-N'-(3,4dichlorobenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-(1,2,2,-trimethylpropyl)-N'-(2,4dichlorobenzoyl)hydrazine
N-(4-toluoyl)-N'-(1,2-dimethyl-2-ethylbutyl-N'-(2-nitro-5-methylbenzoyl)hydrazine
N-(4-toluoyl)-N'-(1,2-dimethyl-2-ethylbutyl)-N'-(2-nitro-3-methylbenzoyl)hydrazine
N-(2,6-difluorobenzoyl)-N'-t-butyl-N'-(2-bromobenzoyl)hydrazine
N-(2-methyl-3-chlorobenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2-methyl-3-chlorobenzoyl)-N'-t-butyl-N'-(3-chloro-4-fluorobenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(3-chloro-4-fluorobenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(3-chloro-4-fluorobenzoyl)hydrazine
N-(3,4-dimethylbenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(3,4-dimethylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(3,4-dimethylbenzoyl)-N'-t-butyl-N'-(2-chlorobenzoylhydrazine
N-(3,4-dimethylbenzoyl)-N'-t-butyl-N-(2,4-dichlorobenzoyl)hydrazine
N-(3,4-dimethylbenzoyl)-N'-t-butyl-N'-(2-bromobenzoyl)hydrazine
N-(3,4-dimethylbenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(3,4-dimethylbenzoyl)-N'-t-butyl-N'-(2-nitrobenzoylhydrazine
N,N'-bis(3,4-dimethylbenzoyl)-N'-t-butylhydrazine
N-benzoyl-N'-t-butyl-N'-(3,4-dimethylbenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(3,4-dimethylbenzoyl)hydrazine
N-(2-chloro-6-fluorobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(4-toluoyl)-N'-(1,2,2-trimethylpropyl-N'-benzoylhydrazine
N-(4-chloromethylbenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2,3-dimethoxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2,3-dimethoxybenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(2,3-dimethoxybenzoyl)-N'-t-butyl-N'-(2-bromobenzoyl)hydrazine
N-(3-chloro-4-fluorobenzoyl)-N'-t-butyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-(4-t-butylbenzoyl)-N'-t-butyl-N'-(3,4-dimethylbenzoyl)hydrazine
N-(4-t-butylbenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(4-t-butylbenzoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(4-t-butylbenzoyl)-N'-t-butyl-N'-(2-nitrobenzoyl) hydrazine
N-(4-t-butylbenzoyl)-N'-t-butyl-N'-(2-bromobenzoyl)hydrazine
N-(4-t-butylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(4-t-butylbenzoyl)-N'-t-butyl-N'-(2-chlorobenzoyl)hydrazine
N-(4-t-butylbenzoyl)-N'-t-butyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-(3,4-dimethylbenzoyl)-N'-t-butyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-(3,4-dimethylbenzoyl)-N'-t-butyl-N'-(4-fluorobenzoyl)hydrazine
N-(4-t-butylbenzoyl)-N'-t-butyl-N'-(4-fluorobenzoyl)hydrazine
N-(4-toluoyl)-N'-(2,2-dimethyl-1-ethylpropyl)-N'-(2-nitrobenzoyl)hydrazine
N-(4-toluoyl)-N'-(2,2-dimethyl-1-ethylpropyl)-N'-(3-nitro-5-methylbenzoyl)hydrazine
N-(4-toluoyl)-N'-(2,2-dimethyl-1-ethylpropyl)-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2-amino-4-methoxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(1-naphthoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(1-naphthoyl)-N'-t -butyl-N'-(2-bromobenzoyl)hydrazine
N-(2-methyl-3-nitrobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2-amino-4-methoxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(1-naphthoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N(1-naphthoyl)-N'-t -butyl-N'-(2-bromobenzoyl)hydrazine
N-(2-methyl-3-nitrobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2-methyl-3-nitrobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2-methyl-3-nitrobenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(2-methyl-3-nitrobenzoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(2-methyl-3-bromobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2-methyl-3-bromobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2-methyl-3-bromobenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine

N-(2-methyl-3-bromobenzoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(2-methyl-3-bromobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2-methylbenzoyl)-N'-t-butyl-N'-(2-bromobenzoyl)hydrazine
N-(2-methylbenzoyl)-N'-t -butyl-N'-(2-nitrobenzoyl)hydrazine
N(-2-methylbenzoyl)-N'-t-butyl-N'-(2-chlorobenzoyl)hydrazine
N-(2-methylbenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(2-methylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2-methylbenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2-methylbenzoyl)-N'-t -butyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-(2-methylbenzoyl)-N'-t-butyl-N'-(3,5-dichlorobenzoyl)hydrazine
N-(2-methyl-3-fluorobenzoyl)-N'-t-butyl-N'-benzoyl)hydrazine
N-(2-methyl-3-fluorobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2-fluoro-6-chlorobenzoyl)-N'-t -butyl-N'-benzoyl)hydrazine
N-(2-fluoro-6-chlorobenzoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(2-fluoro-6-chlorobenzoyl)-N'-t-butyl-N'-(4-fluorobenzoyl)hydrazine
N-(4-(2-chloroethyl)benzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2,4,6-trifluorobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2,4,6-trifluorobenzoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(2,4,6-trifluorobenzoyl)-N'-t-butyl-N'-(2-bromobenzoyl)hydrazine
N-(2,4,6-trifluorobenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2-nitro-3-chlorobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2-nitro-3-chlorobenzoyl)-N'-t-butyl-N'-(3-bromobenzoyl)hydrazine
N-(2-nitro-3-chlorobenzoyl)-N'-t-butyl-N'-(2-nitrobenzoyl)hydrazine
N-(2-nitro-3-chlorobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2-nitro-3-chlorobenzoyl)-N'-t-butyl-N'-(3-chlorobenzoyl)hydrazine
N-(2-nitro-3-chlorobenzoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(2-nitro-3-chlorobenzoyl)-N'-t-butyl-N'-(3,5-dichlorobenzoyl)hydrazine
N-(2-nitro-3-chlorobenzoyl)-N'-t-butyl-N'-(3-5-dimethylbenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(2,3-difluorobenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(2,3-dichlorobenzoyl)hydrazine
N-(2,3-difluorobenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2,3-dichlorobenzoyl)-N'-t-butyl-N'-(2-nitrobenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(2,3-difluorobenzoyl)hydrazine
N-(2,3-dichlorobenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2,3-dichlorobenzoyl-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(2,3-dichlorobenzoyl)-N'-t-butyl-N'-(3,5-dichlorobenzoyl)hydrazine
N-(2,3-dichlorobenzoyl)-N'-t-butyl-N'-(3-chlorobenzoyl)hydrazine
N-(2,3-dichlorobenzoyl)-N'-t-butyl-N'-(2,3-dimethylbenzoyl)hydrazine
N-(2,3-difluorobenzoyl)-N'-t-butyl-N'-(2-bromobenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t -butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(2,6-difluorobenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(2,4-difluorobenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(3-methoxybenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(2-methoxybenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(2-toluoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(4-toluoyl)hydrazine
N-(2-methyl-3-chlorobenzoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(4-(2-chloroethyl)benzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-4-(2-chloroethyl)benzoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(3-fluoro-4-methylbenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(3-fluoro-4-methylbenzoyl)-N'-t-butyl-N'-(3,5-difluorobenzoyl)hydrazine
N-(3-fluoro-4-methylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(3-fluoro-4-methylbenzoyl)-N'-t-butyl-N'-(3,5-dichlorobenzoyl)hydrazine
N-(3-fluoro-4-methylbenzoyl)-N'-t-butyl-N'-(2-nitrobenzoyl)hydrazine
N-(3-fluoro-4-methylbenzoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(3,5-difluorobenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(2-iodobenzoyl)hydrazine

N-(4-(2-hydroxyethyl)benzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2,6-difluoro-3-methylbenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2,6-difluoro-3-methylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2,6-difluoro-3-methylbenzoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(4-chlorobenzoyl)-N'-t-butyl-N'-(2,3-dimethylbenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-(1,2,2-trimethylpropyl)-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-(1,2,2-trimethylpropyl)-N'-(3-toluoyl)hydrazine
N-(2-fluoro-6-chlorobenzoyl)-N'-t-butyl-N'-(2,3-difluorobenzoyl)hydrazine
N-(2,3-difluorobenzoyl)-N'-t-butyl-N'-(2-nitrobenzoyl)hydrazine
N-(2,3-difluorobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2,3-difluorobenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2,3-difluorobenzoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(2,3-difluorobenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(2,3-dichlorobenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(2,4-dimethylbenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(2-nitrobenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(2-methyl-5-chlorobenzoyl)hydrazine
N-benzoyl-N'-t -butyl-N'-(2-methyl-5-chlorobenzoyl)hydrazine
N-(2,3-difluorobenzoyl)-N'-t-butyl-N'-(2-methyl-5-chlorobenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(2,-methyl-5-chlorobenzoyl)hydrazine
N-(2-methyl-3-chlorobenzoyl)-N'-t-butyl-N'-(2-methyl-5-chlorobenzoyl)hydrazine
N-(2,6-difluorobenzoyl)-N'-t-butyl-N'-(2-methyl-5-chlorobenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(2-methyl-5-chlorobenzoyl)hydrazine
N-(4-chlorobenzoyl)-N'-t-butyl-N'-(2-methyl-5-chlorobenzoyl)hydrazine
N-(4-chlorobenzoyl)-N'-t-butyl-N'-(2-methyl-5-chlorobenzoyl)hydrazine
N-(2-fluoro-4-chlorobenzoyl)-N'-t-butyl-N'-benzoyl)hydrazine
N-(2-fluoro-4-chlorobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2-fluoro-4-chlorobenzoyl)-N'-t -butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2-fluoro-4-chlorobenzoyl)-N'-t-butyl-N'-(3,5-dichlorobenzoyl)hydrazine
N-(2-fluoro-4-chlorobenzoyl)-N'-t-butyl-N'-(2-bromobenzoyl)hydrazine
N-(2-fluoro-4-chlorobenzoyl)-N'-t-butyl-N'-(2-nitrobenzoyl)hydrazine
N-(2-chloro-3-methylbenzoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(2-chloro-3-methylbenzoyl)-N'-t-butyl-N'-benzoylhydrazine
N-(2-chloro-3-methylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2-chloro-3-methylbenzoyl)-N'-t -butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2-chloro-3-methylbenzoyl)-N'-t-butyl-N'-(3,5-dichlorobenzoyl)hydrazine
N-(2-bromo-3-methylbenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2-bromo-3-methylbenzoyl)-N'-t-butyl-N'-(2,4-dichlorobenzoyl)hydrazine
N-(2-bromo-3-methybenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine
N-(2-bromo-3-methylbenzoyl)-N'-t-butyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-(2-bromo-3-methylbenzoyl)-N'-t-butyl-N'-(2-bromobenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(2-chlorobenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t -butyl-N'-(2-trifluoromethylbenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(4-ethylbenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(3,5-dichlorobenzoyl)hydrazine
N-(2,6-difluorobenzoyl)-N'-t-butyl-N'-(3-chloro-4-fluorobenzoyl)hydrazine
N-(4-chlorobenzoyl)-N'-t-butyl-N'-(3,5-difluorobenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(3,5-difluorobenzoyl)hydrazine
N-(2-methyl-3-chlorobenzoyl)-N'-t-butyl-N'-(3,5-difluorobenzoyl)hydrazine
N-benzoyl-N'-t-butyl-N'-(3,5-difluorobenzoyl)hydrazine
N-(4-ethylbenzoyl)-N'-t-butyl-N'-(2,5-dimethylbenzoyl)hydrazine
N-(2,6-difluorobenzoyl)-N'-t-butyl-N'-(3,5-difluorobenzoyl)hydrazine
N-(3-chloro-2-methylbenzoyl)-N'-t-butyl-N'-(3,4-dichlorobenzoyl)hydrazine
N-(2,3-dimethylbenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2-bromobenzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine
N-(2-bromo-3-methylbenzoyl)-N'-t-butyl-N'-(3-chlorobenzoyl)hydrazine
N-(2-chloro-3-methylbenzoyl)-N'-t-butyl-N'-(3-chlorobenzoyl)hydrazine

Because of their good insecticidal activity, compounds of the present invention for use in the insecticidal compositions and formulations include those where, any one or any combination of two or more of the substituents conforms to the following definitions:
X and X' are O or S;
R^1 is unsubstituted (C_3-C_8) branched alkyl or a (C_1-C_4) straight chain alkyl substituted with one or two of the same or different (C_3-C_6)-cycloalkyl; preferably R^1 has no more than 10 carbon atoms;
A and B are the same or different unsubstituted naphthyl; or
unsubstituted or substituted phenyl where the substituents can be from one to three of the same or different halo; nitro; cyano; (C_1-C_4) alkyl; halo(C_1-C_4)alkyl; cyano (C_1-C_4) alkyl; (C_1-C_4)alkoxy; alkoxyalkyl having independently 1 to 4 carbon atoms in each alkyl group; -COD4; carboxy; (C_1-C_4)alkoxy-carbonyl; (C_1-C_4)-alkanoyloxy; (C_2-C_6)alkenyl; (C_2-C_6)alkynyl; -ND^4D^5; thiocyanato; (C_1-C_4)alkylthio; CSD^4; unsubstituted or substituted phenyl having one to two of the same or different halo, nitro, C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2, -NHZ or NZZ'; phenoxy where the phenyl ring is unsubstituted or substituted with one or two of the same or different halo, nitro (C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2, -NHZ or NZZ'; or when two adjacent positions on the phenyl ring are substituted with alkoxy groups, these groups may be joined to form together with the carbon atoms to which they are attached a 5-or 6-membered dioxolano or dioxano heterocyclic ring; where D^4 and D^5 are hydrogen or (C_1-C_4)alkyl; Z and Z' are as hereinbefore defined, and
agronomically acceptable salts thereof.

Insecticidal compounds of the present invention having very good activity for use in the insecticidal compositions and formulations of the present invention include those where any one or any combination of two or more, of the substituents conforms to the following definitions:
X and X' are O or S;
R^1 is branched (C_3-C_8)alkyl;
unsubstituted naphthyl;
unsubstituted or substituted phenyl having one to three of the same or different halo; nitro; cyano; (C_1-C_4)-alkyl; halo(C_1-C_4)alkyl; cyano(C_1-C_4)alkyl; (C_1-C_4)alkoxy; alkoxyalkyl having independently 1 to 4 carbon atoms in each alkyl group; -COD^4; (C_1-C_4)alkoxy-carbonyl; (C_1-C_4)alkanoyloxy; thiocyanato; unsubstituted or substituted phenyl having one or two of the same or different halo, nitro (C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2, -NHZ or NZZ'; or phenoxy where the phenyl ring is unsubstituted or substituted with one or two of the same or different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2, -NHZ or -NZZ'; where D^4, Z and Z' are as hereinbefore defined; and
agronomically acceptable salts thereof.

Because of their excellent insecticidal activity, preferred compounds of the present invention for use in the insecticidal compositions and formulations of the present invention include those where any one or any combination of two or more of the substituents conforms to the following definitions:
X and X' are O;
R^1 is branched (C_4-C_7)alkyl; and
A and B are the same or different phenyl or substituents phenyl where the substituents can be from one to three of the same or different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, or halo(C_1-C_4)alkyl; and
agronomically acceptable salts thereof..

Because of their outstanding insecticidal activity, particularly preferred compounds of the present invention for use in the insecticidal compositions and formulations of the present invention include those where any one or any combination of two or more of the substituents conforms to the following definitions:
X and X' are O;
R^1 is t-butyl, neopentyl (2,2-dimethylpropyl) or 1,2,2-trimethylpropyl;
A and B are the same or different phenyl or substituted phenyl where the substituents can be one, two or three of the same or different chloro, fluoro, bromo, iodo, nitro, methyl, ethyl, methoxy or trifluoromethyl; an agronomically acceptable salts thereof.

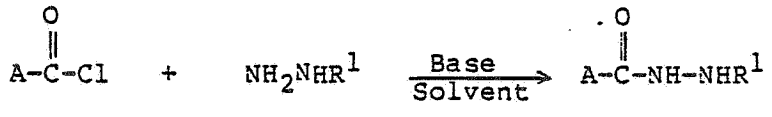
Those N'-substituted-N,N'-diacylhydrazines of Formula I which possess acidic or basic functional groups may be further reacted to form novel salts with appropriate bases or acids. These salts also exhibit pesticidal activity. Typical salts are the agronomically acceptable metal salts, ammonium salts and acid addition salts. Among the metal salts are those in which the metal cation is an alkali metal cation such as sodium, potassium, lithium or the like; alkaline earth metal cation such as calcium, magnesium, barium, strontium or the like; or heavy metal cation such as zinc, manganese, cupric, cuprous, ferric, ferrous, titanium, aluminum or the like. The ammonium salts include those in which the ammonium cation has the formula $NR^5R^6R^7R^8$ wherein each of R^5, R^6, R^7, and R^8, are independently hydrogen, hydroxy, (C_1-C_4)alkoxy, -(C_1-C_{20})alkyl, (C_3-C_8)alkenyl, (C_3-C_8)hydroxyalkyl, (C_2-C_8)alkoxyalkyl, (C_2-C_6)aminoalkyl, (C_2-C_6)haloalkyl, amino, (C_1-C_4)alkyl-or (C_1-C_4)dialkylamino, substituted or unsubstituted phenyl, substituted or unsubstituted

phenylalkyl, having up to four carbon atoms in the alkyl moiety, or any two or R^5, R^6, R^7 or R^8 can be taken together to form with the nitrogen atom a 5-or 6-membered heterocyclic ring, optionally having up to one additional hetero atom (e.g., oxygen, nitrogen, or sulfur) in the ring, and preferably saturated, such as piperidino, morpholino, pyrrolidino, piperazino or the like, or any three of R^5, R^6, R^7 or R^8 can be taken together to form with the nitrogen atom a 5-or 6-membered aromatic heterocyclic ring, such as piperazole or pyridine. When R^5, R^6, R^7 or R^8 substituent in the ammonium group is a substituted phenyl or substituted phenylalkyl, the substituents on the phenyl and phenalkyl will generally be selected from halo, (C_1-C_6)alkyl, -(C_1-C_4)alkoxy, hydroxy, nitro, trifluoromethyl, cyano, amino, (C_1-C_4)alkylthio and the like. Such substituted phenyl groups preferably have up to two such substituents. Representative ammonium cations include ammonium, dimethylammonium, 2-ethylhexylammonium, bis(2-hydroxyethyl)ammonium, tris(2-hydroxyethyl)ammonium, dicyclohexylammonium, t-octylammonium, 2-hydroxyethylammonium, morpholinium, piperidinium, 2-phenethylammonium, 2-methylbenzylammonium, n-hexylammonium, triethylammonium, trimethylammonium, tri(n-butylammonium, methoxyethylammonium, diisopropylammonium, pyridinium, dialkylammonium, pyrazolium, propargylammonium, dimethylhydrazinium, octadecylammonium, 4-dichlorophenylammonium, 4-nitrobenzylammonium, benzyltrimethylammonium, 2-hydroxyethyldimethyloctadecylammonium, 2-hydroxyethyldiethyloctylammonium, decyltrimethylammonium, hexyltriethylammonium, 4-methylbenzyltrimethylammonium, and the like. Among the acid addition salts are those in which the anion is an agronomically acceptable anion such as hydrochloride, hydrobromide, sulfate, nitrate, perchlorate, acetate, oxalate and the like.

The compounds of this invention or their precursors can be prepared according to the following processes. Process A can be used when preparing compounds according to Formula I where X and X' are both oxygen and A and B are the same (for example, both A and B are phenyl or 4-chlorophenyl) or different (for example, A is 4-methylphenyl and B is 4-bromophenyl).

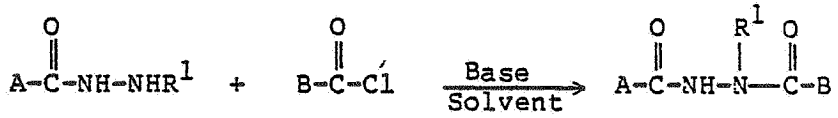
Process A:

Step 1



II III IV

Step 2



IV V I

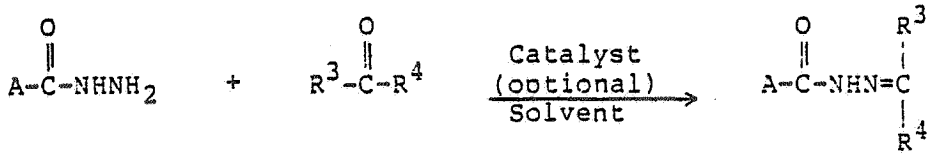
where R', A and B are as defined above for Formula I and X and X' are oxygen.

Process B can be used when preparing compounds according to Formula I where X and X' are oxygen, and R', A and B are as defined above for Formula I.

Process B:

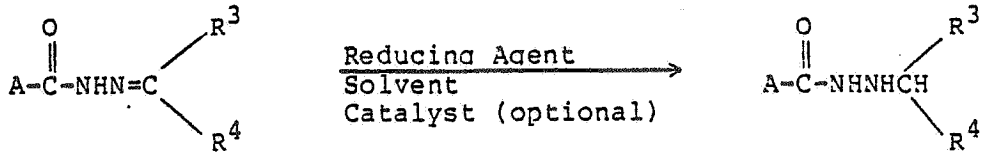
Method 1

Step 1



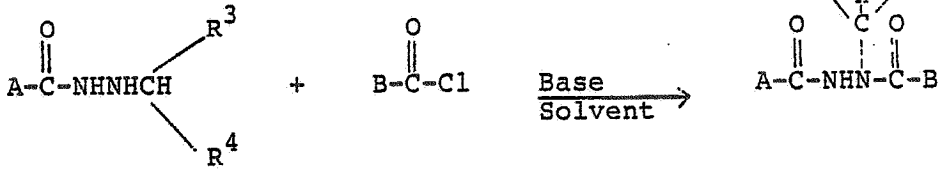
VI VII VIII

Step 2



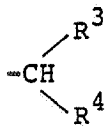
VIII IX (IV)

Step 3



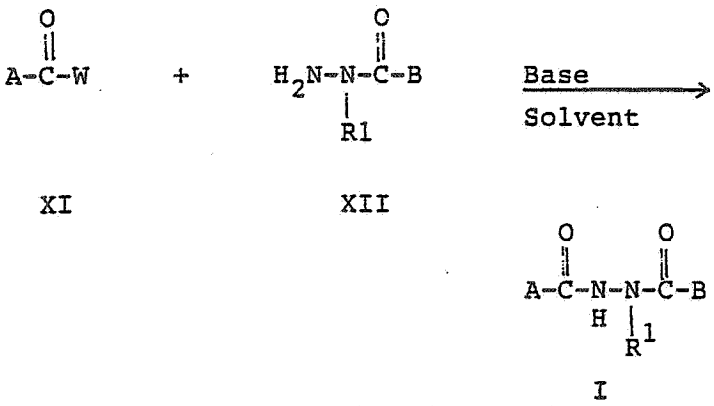
IX (IV) V X (I)

where X and X' are oxygen, A and B are as defined above for Formula I, and R^3 and R^4 are the same or different hydrogen or (C_3 to C_9) unsubstituted straight chain alkyl or (C_1 to C_8) unsubstituted straight chain alkyl or (C_3 to C_6)cycloalkyl or (C_1 to C_3) straight chain alkyl substituted by one or two (C_3 to C_6)cycloalkyl and, further, the whole group



is a group R' as defined above for Formula I. As can be seen above, the intermediate product of Step 2, the compounds of Formula IX, corresponds to the compounds of Formula IV. In addition, the compound of Formula X corresponds to the compounds of Formula I where X and X' are oxygen.

Method 2



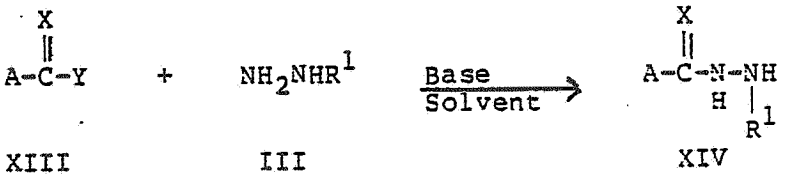
XI XII I

where R', A and B are as defined above for Formula I and W is a good leaving group such as halo, for example, chloro; an alkoxy, for example, ethoxy; methyl sulfonate ($-OSO_2CH_3$); or an ester, for example, acetate ($-OC(O)CH_3$).

Process C can be used when preparing compounds according to Formula I where A, B and R' are as defined for Formula I and one or both X and X' are sulfur.

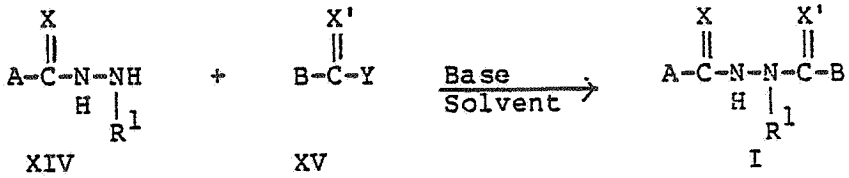
Process C:

Step 1:



XIII III XIV

Step 2:



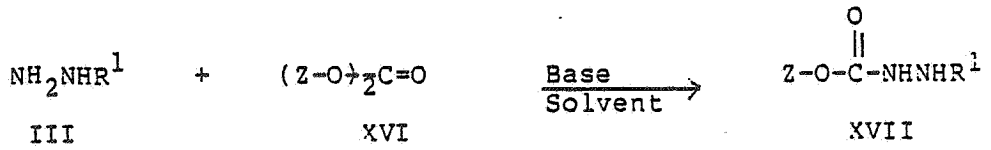
XIV XV I

where A, B and R' are as defined above for Formula I and one or both X and X' are sulfur, and Y is a good leaving group such as carboxyalkylthio (for example, carboxymethylthio, $-SCH_2CO_2H$); alkylthio (for example, methylthio); or halo (for example, chloro).

Process D can be used when preparing compounds according to Formula I where X and X' are oxygen and R', A and B are as defined above for Formula I.

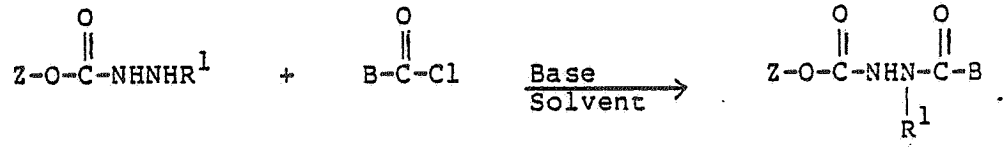
Process D

Step 1



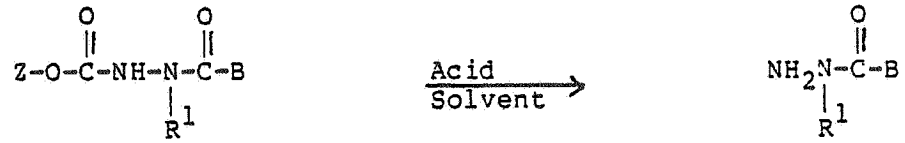
III XVI XVII

Step 2



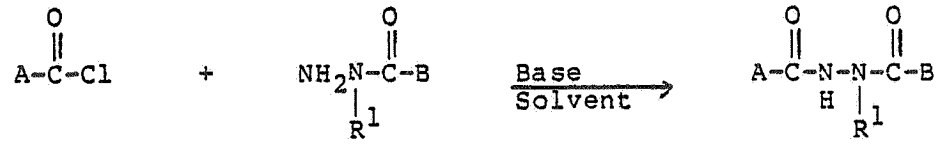
XVII V XVIII

Step 3



XVIII XIX

Step 4



II XIX I

wherein A, B and R' are as defined above for Formula I and Z is tbutyl; ethyl; phenyl; or benzyl.

In process A, a compound of Formula II is reacted with a monosubstituted hydrazine of Formula III or a corresponding acid addition salt such as the hydrochloride salt or the like in the presence of a base in an inert or substantially inert solvent or mixture of solvents to afford an intermediate product of Formula IV which can be isolated or further reacted with a compound of Formula V in the presence of a base in an inert or substantially inert solvent or mixture of solvents to afford the desired product of Formula I.

When A and B are the same, for example, both A and B are 4-chlorophenyl, two equivalents of a compound of Formula II or V are reacted with a monosubstituted hydrazine of Formula III in the presence of a base in an inert or substantially inert solvent or mixture of solvents to afford the desired product of Formula I.

Examples of the compounds of Formula II and/or Formula V which can be used in the above processes include benzoyl chloride, 4-chlorobenzoyl chloride, 4-methylbenzoyl chloride, 3,5-dichlorobenzoyl chloride, 2-bromobenzoyl chloride, 3-cyanobenzoyl chloride and the like. The compounds of Formula II and/or Formula V are generally commercially available or can be prepared by known procedures.

Examples of the compounds of Formula III which can be used in the above processes include isopropylhydrazine, t-butylhydrazine, neopentylhydrazine, alpha-methylneopentylhydrazine, isobutylhydrazine, isopentylhydrazine, isooctylhydrazine, and the like. The compounds of Formula III are generally commerically available or can be prepared by known procedures. For example, the Grignard reagent addition product of acetone azine in diethyl ether is hydrolyzed by the adition of an acid (such as oxalic acid), in a suitable solvent or mixture of solvents (such as ethanol and diethyl ether, 1:1) to afford the monosubstituted hydrazine of Formula III.

Suitable solvents for use in the above processes include water; alcohols such as methanol, ethanol, isopropanol and the like; hydrocarbons such as toluene, xylene, hexane, heptane and the like; glyme; tetrahydrofuran; acetonitrile; pyridine; or haloalkanes such as methylene chloride or mixtures of these solvents.

Preferred solvents are water, toluene, methylene chloride or a mixture of these solvents.

Examples of bases for use in the above processes include tertiary amines such as triethylamine; pyridine; potassium carbonate; sodium carbonate; sodium bicarbonate; sodium hydroxide; or potassium hydroxide. Preferred bases are sodium hydroxide, potassium hydroxide or triethylamine.

In Process B, Method 1, a compound of Formula VI is reacted with a ketone or aldehyde of Formula VII in an inert or substantially inert solvent or mixture of solvents and optionally in the present of a catalyst to afford an intermediate product of Formula VIII. The intermediate product of Formula VIII is then further reacted with a reducing agent in an inert or substantially inert solvent or mixture of solvents to afford a second intermediate product of Formula IX (IV) which can be isolated or further reacted with a compound of Formula V in the presence of a base in an inert or substantially inert solvent or mixture of solvents to afford the desired product of Formula X (I).

Examples of the compounds of Formula VI which can be used in the above Process B, Method 1, include benzoylhydrazine, 4-chlorobenzoylhydrazine, 2-methylbenzoylhydrazine, 4-methylbenzoylhydrazine, 3,5-dichlorobenzoylhydrazine and the like. The compounds of Formula VI are generally commercially available or can be prepared by known procedures.

Examples of the compounds of Formula VII which can be used in the above Process B, Method I, include 1,1,1-trimethylacetaldehyde, methylethylketone, diethylketone and the like. The compounds of Formula VII are generally commerically available or can be prepared by known procedures.

Optionally, a catalyst may be used in Step 1, Method 1 of of Process B. Suitable catalysts generally include organic acids such as acetic acid, trifluoroacetic acid, oxalic acid and the like; mineral acids such as hydrochloric acid, sulfuric acid, nitric acid and the like; arylsulfonic acids such as toluenesulfonic acid; or pyridinium toluenesulfonate. Preferred catalysts are organic acids or arylsulfonic acids. Most preferred catalysts are acetic acid or trifluoroacetic acid.

Suitable solvents for use in the above Process B, Method 1, Step 1, include alcohols such as methanol, ethanol, isopropanol and the like; hydrocarbons such as toluene, benzene; ethers such as tetrahydrofuran - (THF), glyme and the like; or dimethylformamide. Preferred solvents are alcohols and hydrocarbons. Most preferred solvents are alcohols such as methanol or ethanol.

Examples of suitable reducing agents for use in the above Process B, Method 1, Step 2, include hydrides such as sodium borohydride and derivatives thereof such as sodium cyanoborohydride, lithium aluminum hydride and derivatives thereof and the like; or diborane. Preferred reducing agents are sodium borohydride and derivatives thereof or lithium aluminum hydride and derivatives thereof. Most preferred as a reducing agent is sodium cyanoborohydride.

Optionally, in Process B, Method 1, Step 2, a catalyst may be included. Examples of suitable catalysts include organic acids such as acetic acid, trifluoroacetic acid; or mineral acids such as hydrochloric acid, sulfuric acid and the like. Preferred catalysts are organic acids or hydrochloric acid. Most preferred catalysts are acetic acid, trifluoroacetic acid or hydrochloric acid.

Suitable solvents for use in the above Process B, Method 1, Step 2, include alcohols such as methanol, ethanol, isopropanol and the like; ethers such as tetrahydrofuran (THF), diethylether, glyme and the like; or halohydrocarbons such as methylene chloride, chloroform and the like. Preferred solvents are alcohols and most preferred are methanol or ethanol.

Step 3 of Process B, Method 1 corresponds to Step 2 of Process A. Consequently, those bases and solvents suitable for use in Step 2 of Process A are suitable for use in Step 2, Method 1 of Process B including the preferred bases and solvents described above.

In Process B, Method 2, an N'-substituted-N'-benzoylhydrazine of Formula XII is reacted with a compound of Formula XI in the presence of a base in an inert or substantially inert solvent or mixture of solvents to afford the desired product of Formula I.

The compounds of Formula XI are generally commercially available or can be prepared from commerically available compounds by procedures well known to those skilled in the art as described below.

Examples of the compounds of Formula XII which can be used in the above Process B, Method 2, include N'-t-butyl-N'-benzoylhydrazine; N'-t-butyl-N'-(3-methylbenzoyl)hydrazine; N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine; N'-t-butyl-N'-(2-fluorobenzoyl)hydrazine; N'-isopropyl-N'-benzoyl)hydrazine; N'-neopentyl-N'-(4-chlorobenzoyl)hydrazine, and the like.

Suitable solvents for use in the above Process B, Method 2, include water; hydrocarbons such as toluene, xylene, hexane, heptane and the like; alcohols such as methanol, ethanol, isopropanol, and the like; glyme; tetrahydrofuran; acetonitrile; pyridine; or haloalkanes such as methylene chloride; or mixtures of these solvents. Preferred solvents are water, toluene, methylene chloride or a mixture of these solvents.

Examples of bases suitable for use in the above Process C includes tertiary amines such as triethylamine; pyridine; potassium carbonate; sodium carbonate; sodium bicarbonate; sodium hydroxide; or potassium hydroxide. Preferred bases are sodium hydroxide, or triethylamine.

The compounds of Formula XI are commercially available, such as nicotinoyl chloride hydrochloride, isonicotinyol chloride hydrochloride and ethyl picolinate or can be prepared from commerically available materials by procedures known to those skilled in the art.

The compounds of Formula XII can be prepared by procedures known to those skilled in the art from commerically available reactants. By way of example, a suitably substituted hydrazine (such as t-butylhydrazine) is reacted with an aldehyde or ketone (such as acetone) in the presence of a base (such as triethylamine) to afford a hydrazone which is then reacted with a benzoyl chloride in an inert or substantially inert solvent or mixture of solvents in the presence of a base (such as sodium hydroxide) to afford an N'-substituted-N'-benzoylhydrazone which is then reacted with an acid (such as hydrochloric acid) to afford the compound of Formula XII. Alternatively, a suitable substituted hydrazine (such as t-butyl-hydrazine) is reacted with ditert-butyldicarbonate in an inert or substantially inert solvent or mixture of solvents (such as toluene/water) to afford an N'-t-butyl-N-t-butoxycarbonylhydrazine which is then reacted with a benzoylchloride in an inert or substantially inert solvent or mixture of solvents to afford an N'-t-butyl-N'-benzoyl-N-t-butoxycarbonyl hydrazine which is then reacted with an acid to afford the desired compound of Formula XII.

In Process C, a compound of Formula XII is reacted with a monosubstituted hydrazine of Formula III or a corresponding acid addition salt such as the hydrochloride salt or the like in the presence of a base in an inert or substantially inert solvent or mixture of solvents to afford an intermediate compound of Formula XIV which can be isolated or further reacted with a compound of Formula XV in the presence of a base in an inert or substantially inert solvent or mixture of solvents to afford the desired product of Formula I.

In Process D, a monosubstituted hydrazine of Formula III or a corresponding acid addition salt, such as the hydrochloride salt or the like, is reacted with a compound of Formula XVI in the presence of a base in an inert or substantially inert solvent or mixture of solvents to afford an intermediate product of Formula XVII. The intermediate product of Formula XVII is then further reacted with a compound of Formula V in the presence of a base in an inert or substantially inert solvent or mixture of solvents to afford a second intermediate product of Formula XVIII. The second intermediate product of Formula XVIII is then further reacted with an acid in an inert or substantially inert solvents or mixture of solvents to afford a third intermediate product of Formula XIX. The third intermediate product of Formula XIX is then further reacted with a compound of Formula II in the presence of a base in an inert or substantially inert solvent or mixture of solvents to afford the desired product of Formula I.

Examples of the compounds of Formula XVI which can be used in the above Process D include di-t-butylcarbonate, diethylcarbonate, diphenylcarbonate, dibenzylcarbonate and the like. The compounds of Formula XVI are generally commercially available or can be prepared by known procedures.

Suitable solvents for use in the above Process D, Steps 1, 2 and 4 include water; tetrahydrofuran; dioxane; toluene; alcohols such as methanol, ethanol and isopropanol; hexane; acetonitrile; pyridine; and haloalkanes such as methylene chloride; or mixtures of these solvents.

Preferred solvents are dioxane; toluene; tetrahydrofuran; pyridine; methylene chloride or water.

Most preferred solvents are dioxane; water or toluene.

Examples of the bases for use in the above Process D, Steps 1, 2 and 4 include tertiary amines such as triethylamine; pyridine; potassium carbonate, sodium carbonate; sodium bicarbonate; sodium hydroxide; and potassium hydroxide.

Preferred bases are sodium hydroxide; potassium hydroxide; pyridine or triethylamine.

Suitable solvents for use in the above Process D, Step 3 include alcohols such as methanol, ethanol and isopropanol; water; tetrahydrofuran; dioxane; and acetonitrile.

Preferred solvents are methanol or ethanol.

Examples of acids for use in the above Process D, Step 3 include concentrated hydrochloric acid or concentrated sulfuric acid.

When A and B are the same, for example, both A and B are unsubstituted phenyl, two equivalents of a compound Formula XIII or XV are reacted with a monosubstituted hydrazine of Formula III in the presence of a base in an inert or substantially inert solvent or mixture of solvents to afford the desired product of Formula I.

Examples of the compounds of Formula XIIII and/or Formula XV which can be used in the above Process C include 3-methyl-methylthio-thiobenzoate, 4-chloro-methylthio-thiobenzoate, 4-methyl-methylthio-thiobenzoate, carboxymethylthio-thiobenzoate and the like. The compounds of Formula XIII and or Formula XIV are generally commerically available or can be prepared by known procedures.

Suitable solvents for use in the above Process C are generally polar high-boiling solvents such as dimethylformamide (DMF); glyme; tetrahydrofuran (THF); and pyridine. The preferred solvent is pyridine.

Suitable bases for use in the above Process C include tertiary amines such as triethylamine; and pyridine. The preferred base is pyridine.

The above Processes A and B, Method 1, can be carried out at temperatures between about -20°C and about 100°C. Preferably, these reactions are carried out between about -5°C and about 50°C.

The above Process B, Method 2, can be carried out at temperatures between about -50°C and about 150°C. Preferably when W is a halo radical, the reaction is carried out between about 0°C and about 30°C. When W is alkoxy, the reaction is preferably carried out between about 100°C and about 150°C. When W is methyl sulfonate, the reaction is preferably carried out between about -20°C to about 20°C. When W is an ester, the reaction is preferably carried out between about 0°C and about 50°C.

Process C can be carried out at temperatures between about 10°C and 200°C. Preferably, this reaction is carried out between about 70°C and about 100°C.

Process D can be carried out at temperatures between about 0°C and 100°C. Preferably, these reactions are carried out between about 0°C and about 50°C.

Preparation of the compounds of the present invention by processes A, B, C and D is preferably carried out at about atmospheric pressure, although higher or lower pressures can be used if desired.

Substantially equimolar amounts of reactants are preferably used in processes A, B and C, although higher or lower amounts can be used if desired.

Generally, about one equivalent of base is used per equivalent of starting material of Formula II, V, XI and/or XIII. Where the acid addition salt of the monosubstituted hydrazine of Formula III is used, one additional equivalent of base is used. For example, in Process A, when substituents A and B are the same and a monosubstituted hydrazine is used, about two equivalents of base are used since about two equivalents of a suitably substituted benzoyl chloride of Formula II or V are employed. In Process A, when substituents A and B are different and an acid addition salt of the monosubstituted hydrazines of Formula III is used, about two equivalents of base are used in Step 1 and about one equivalent of base is used in Step 2.

Modifications to the above processes may be necessary to accommodate reactive funtionalities of particular A and/or B substituents. Such modifications would be apparent and known to those skilled in the art.

It will be appreciated by those skilled in the art that electronic forces may give rise to more than one isomer of the compounds of Formula I such as enantiomers, conformers and the like. There may be a difference in properties such as physical characteristics and degree of biological activity between such isomers. Separation of a specific isomer can be accomplished by standard techniques well known to those skilled in the art such as silica gel chromatography.

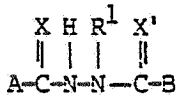
The agronomically acceptable salts embraced by Formula I of the invention can be prepared by reacting a metal hydroxide, a metal hydride or an amine or ammonium salt, such as a halide, hydroxide or alkoxide with a compound of Formula I having one or more hydroxy or carboxy groups or reacting a quaternary ammonium salt, such as chloride, bromide, nitrate or the like with a metal salt of a compound of Formula I in a suitable solvent. When metal hydroxides are used as reagents, useful solvents include water; ethers such as glyme and the like; dioxane; tetrahydrofuran; alcohols such as methanol, ethanol, isopropanol and the like. When metal hydrides are used as reagents, useful solvents include nonhydroxylic solvents, for example, ethers such as dioxane, glyme, diethylether and the like; tetrahydrofuran; hydrocarbons such as toluene, xylene, hexane, pentane, heptane, octane and the like; dimethylformamide, and the like. When amines are used as reagents, useful solvents include alcohols, such as methanol or ethanol; hydrocarbons, such as toluene, xylene, hexane and the like; tetrahydrofuran; glyme; dioxane; or water. When ammonium salts are used as reagents, useful solvents include water; alcohols, such as methanol or ethanol; glyme; tetrahydrofuran; or the like. When the ammonium salt is other than a hydroxide or alkoxide,

an additional base, such as potassium or sodium hydroxide, hydride, or alkoxide is generally used. The particular choice of solvent will depend on the relative solubilities of the starting materials and the resultant salts, and slurries rather than solutions of certain reagents may be used to obtain the salts. Generally, equivalent amounts of the starting reagents are used and the salt-forming reaction is carried out at about 0°C to about 100°C, preferably at about room temperature.

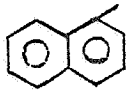
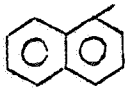
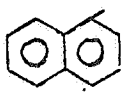
The acid addition salts of the present invention can be prepared by reacting hydrochloric, hydrobromic, sulfuric, nitric, phosphoric, acetic, propionic, benzoic or other suitable acid with a compound of Formula I having a basic functional group in a suitable solvent. Useful solvents include water, alcohols, ethers, esters, ketones, haloalkanes and the like. The particular choice of solvent will depend on the relative solubilities of the starting materials and the resulting salts and slurries rather then solutions of certain reagents may be used to obtain the salts. Generally, equivalent molar amounts of starting materials are used and the salt-forming reaction is carried out at from about -10°C to about 100°C, preferably at about room temperature.

The following Examples, and the individual substituents mentioned therein and each and every combination of, or group containing, two or more of these substituents, will further illustrate this invention but are not intended to limit it in any way. In Table I, ssome N'-substituted-N,N'-diacyl hydrazines of the present invention that have been made are listed. The structure of these compounds was confirmed by NMR and in some cases by IR and/or elemental analysis. Specific illustrative preparation of the compounds of Examples 1, 3, 16, 44, 102, 103, 148, 220, 295, 324 and 625 are described after Table I.

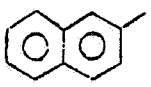
TABLE I

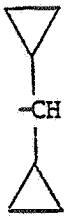
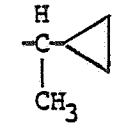


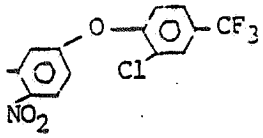
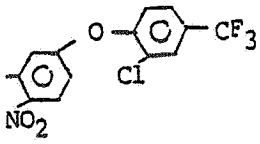
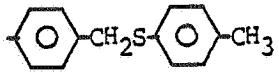
Ex. No.	X	X'	R^1	A	B
1	O	O	$-C(CH_3)_3$	$-C_6H_4Cl-4$	$-C_6H_4Cl-4$
2	O	O	$-C(CH_3)_3$	$-C_6H_4Cl-3$	$-C_6H_4Cl-3$
3	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_5$
4	O	O	$-C(CH_3)_3$	$-C_6H_3Cl_2-3,4$	$-C_6H_3Cl_2-3,4$
5	O	O	$-C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_4CH_3-4$
6	O	O	$-C(CH_3)_3$	$-C_6H_4NO_2-4$	$-C_6H_4NO_2-4$
7	O	O	$-C(CH_3)_3$	$-C_6H_4OCH_3-4$	$-C_6H_4OCH_3-4$
8	O	O	$-C(CH_3)_3$	$-C_6H_4NO_2-3$	$-C_6H_4NO_2-3$
9	O	O	$-C(CH_3)_3$	$-C_6H_4OCH_3-3$	$-C_6H_4OCH_3-3$
10	O	O	$-C(CH_3)_3$	$-C_6H_4NO_2-2$	$-C_6H_4NO_2-2$
11	O	O	$-C(CH_3)_3$	$-C_6H_4Cl-2$	$-C_6H_4Cl-2$
12	O	O	$-C(CH_3)_3$	$-C_6H_4OCH_3-2$	$-C_6H_4OCH_3-2$
13	O	O	$-C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_5$
14	O	O	$-C(CH_3)_3$	$-C_6H_4CN-4$	$-C_6H_4CN-4$
15	O	O	$-C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_4Cl-4$
16	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4Cl-4$
17	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4Cl-3$
18	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4Cl-2$
19	O	O	$-C(CH_3)_3$	$-C_6H_4CH_3-3$	$-C_6H_4CH_3-3$
20	O	O	$-C(CH_3)_3$	$-C_6H_4CH_3-2$	$-C_6H_4CH_3-2$
21	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH_3-4$
22	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH_3-3$
23	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH_3-2$
24	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4OCH_3-4$
25	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4OCH_3-3$
26	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4OCH_3-2$
27	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4C(CH_3)_3-4$

Ex. No.	X	X'	R^1	A	B
28	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CN-4$
29	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4NO_2-4$
30	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4NO_2-3$
31	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4NO_2-2$
32	O	O	$-C(CH_3)_3$	$-C_6H_4C(CH_3)_3-4$	$-C_6H_4C(CH_3)_3-4$
33	O	O	$-C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_3Cl_2-3,4$
34	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4F-4$
35	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4F-3$
36	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4F-2$
37	O	O	$-C(CH_3)_3$	$-C_6H_3Cl_2-3,5$	$-C_6H_3Cl_2-3,5$
38	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3Cl_2-2,4$
39	O	O	$-CH(CH_3)_2$	$-C_6H_5$	$-C_6H_5$
40	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CF_3-4$
41	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CF_3-3$
42	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CF_3-2$
43	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3F_2-2,5$
44	O	O	$-CH_2C(CH_3)_3$	$-C_6H_5$	$-C_6H_5$
45	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CN-3$
46	O	O	$-CH(CH_3)CH_2CH_3$	$-C_6H_5$	$-C_6H_5$
47	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3F_2-2,6$
48	O	O	$-C(CH_3)_3$	$-C_6H_4Cl-4$	$-C_6H_5$
49	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3Cl_2-3,4$
50	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3Cl_2-3,5$
51	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3Cl_2-2,6$
52	O	O	$-C(CH_3)_3$	$-C_6H_4C(CH_3)_3-4$	$-C_6H_5$
53	O	O	$-C(CH_3)_3$	$-C_6H_4Cl-2$	$-C_6H_5$
54	O	O	$-C(CH_3)_3$		$-C_6H_5$
55	O	O	$C(CH_3)_3$		
56	O	O	$-C(CH_3)_3$	$-C_6H_4Cl-3$	$-C_6H_5$

Ex. No.	X	X'	R^1	A	B
57	O	O	$-C(CH_3)_3$	$-C_6H_4Cl-4$	$-C_6H_3Cl_2-3,4$
58	O	O	$-C(CH_3)_3$	$-C_6H_4Cl-2$	$-C_6H_3Cl_2-3,4$
59	O	O	$-C(CH_3)_3$	$-C_6H_4CH_3-2$	$-C_6H_5$
60	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3Cl-2-NO_2-4$
61	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3(NO_2)_2-3,5$
62	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3Cl_2-2,3$
63	O	O	$-CH(CH_3)C(CH_3)_3$	$-C_6H_5$	$-C_6H_5$
64	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3Cl-2-CH_3-5$
65	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3(CH_3)_2-3,5$
66	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3NO_2-2-CH_3-5$
67	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3CH_3-2-Cl-3$
68	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3Cl-3-CH_3-4$
69	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3NO_2-2-Cl-3$
70	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3OCH_3-3-NO_2-4$
71	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3NO_2-2-OCH_3-3$
72	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3(NO_2)_2-2,4$
73	O	O	$-C(CH_3)_3$	$-C_6H_4Cl-4$	$-C_6H_4Cl-2$
74	O	O	$-C(CH_3)_3$	$-C_6H_4Cl-4$	$-C_6H_4Cl-3$
75	O	O	$-C(CH_3)_3$	$-C_6H_4Cl-4$	$-C_6H_4CH_3-4$
76	O	O	$-C(CH_3)_3$	$-C_6H_4Cl-4$	$-C_6H_3Cl_2-3,5$
77	O	O	$-C(CH_3)_3$	$-C_6H_4Cl-4$	$-C_6H_3Cl_2-2,4$
78	O	O	$-C(CH_3)_3$	$-C_6H_4Cl-4$	$-C_6H_4CF_3-4$
79	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CSO_2CH_3-4$
80	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH(CH_3)_2-4$
81	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4OCOCH_3-2$
82	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH_2CH_3-4$
83	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4Br-2$
84	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4OH-4$
85	O	O	$-C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_4CH_3-2$
86	O	O	$-C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_4CH_3-3$
87	O	O	$-C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_3Cl_2-2,4$
88	O	O	$-C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_3Cl_2-3,5$

Ex. No.	X	X'	R^1	A	B
89	O	O	$-C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_4Cl$-2
90	O	O	$-C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_4F$-4
91	O	O	$-C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_4CF_3$-4
92	O	O	$-C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_4Cl$-3
93	O	O	$-C(CH_3)_3$	$-C_6H_4Cl$-4	$-C_6H_4CH_2Cl$-3
94	O	O	$-C(CH_3)_3$	$-C_6H_4Cl$-4	$-C_6H_4CH_2Cl$-4
95	O	O	$-C(CH_3)_3$	$-C_6H_4Cl$-4	$-C_6H_4CH_3$-2
96	O	O	$-C(CH_3)_3$	$-C_6H_4Cl$-4	$-C_6H_4OCH_3$-3
97	O	O	$-C(CH_3)_3$	$-C_6H_4Cl$-4	$-C_6H_4CH_3$-3
98	O	O	$-C(CH_3)_3$	$-C_6H_4F$-4	$-C_6H_4F$-4
99	O	O	$-C(CH_3)_3$	$-C_6H_4F$-3	$-C_6H_4F$-3
100	O	O	$-C(CH_3)_3$	$-C_6H_4F$-2	$-C_6H_4F$-2
101	O	O	$-C(CH_3)_3$		
102	S	O	$-C(CH_3)_3$	C_6H_4Cl-4	C_6H_5
103	O	S	$-C(CH_3)_3$	C_6H_5	C_6H_5
104	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4Br$-4
105	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4Br$-3
106	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4-CH_2CH_2CH_2CH_3$-4
107	O	O	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_5$
108	O	O	$-C(CH_3)_3$	$-C_6H_3Cl_2$-3,4	$-C_6H_5$
109	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4COCH_3$-4
110	O	O	$-CH_2-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4Br$-2
111	O	O	$-CH_2-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4NO_2$-2
112	O	O	$-CH_2-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4OCH_3$-2
113	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4I$-2
114	O	O	$-CH_2CH(CH_3)_2$	$-C_6H_5$	$-C_6H_5$
115	O	O	$-CH(CH_3)_2$	$-C_6H_5$	$-C_6H_4Br$-2
116	O	O	$-CH(CH_3)_2$	$-C_6H_5$	$-C_6H_3Cl_2$-3,4
117	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4OC_6H_5$-4
118	O	O	$-C(CH_3)_3$	$-C_6H_4CF_3$-4	$-C_6H_5$

Ex. No.	X	X'	R^1	A	B
119	O	O	$-C(CH_3)_3$	$-C_6H_4CF_3-4$	$-C_6H_3Cl_2-3,4$
120	O	O		$-C_6H_5$	$-C_6H_5$
121	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3Cl-2-Br-4$
122	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4C_6H_5-4$
123	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_2(OCH_3)_3-3,4,5$
124	O	O	$-CH(CH_3)C(CH_3)_3$	$-C_6H_5$	$-C_6H_4NO_2-2$
125	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH_2SCN-3$
126	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH_2CN-3$
127	O	O	$-CH(CH_3)C(CH_3)_3$	$-C_6H_5$	$-C_6H_5$
128	O	O	$-CH[CH(CH_3)_2]_2$	$-C_6H_5$	$-C_6H_5$
129	O	O		$-C_6H_5$	$-C_6H_5$
130	O	O	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3-4$	$-C_6H_4CH_3-3$
131	O	O	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3-4$	$-C_6H_4Cl-4$
132	O	O	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3-4$	$-C_6H_4NO_2-2$
133	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH_2CH_3-3$
134	O	O	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3-4$	$-C_6H_4Br-3$
135	O	O	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3-4$	$-C_6H_4I-2$
136	O	O	$-CH(CH_3)C(CH_3)_3$	$-C_6H_5$	$-C_6H_4Br-2$
137	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CO_2CH_3-4$
138	O	O	$-C(CH_3)_3$	$-C_6H_4Br-2$	$-C_6H_5$
139	O	O	$-C(CH_3)_3$	$-C_6H_4CF_3-2$	$-C_6H_5$
140	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4I-3$
141	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH_2CH_3-2$
142	O	O	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH_2OCH_3-3$

Ex. No.	X	X'	R^1	A	B
143	0	0	$-CH(CH_3)-$ 	$-C_6H_5$	$-C_6H_5$
144	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4OCH_2CH=CH_2-4$
145	0	0	$-C(CH_3)_3$	$-C_6H_4C_6H_5-4$	$-C_6H_4C_6H_5-4$
146	0	0	$-C(CH_3)_3$	$-C_6H_5$	
147	0	0	$-C(CH_3)_3$		C_6H_5
148	0	0	$-C(CH_3)_3$	$-C_6H_4(-CH_2OC(O)C_6H_5)-2$	$-C_6H_5$
149	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4SO_2CH_3-4$
150	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4OH-2$
151	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4SCH_3-4$
152	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3Br-3-CH_3-4$
153	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3CH_3-3-Br-4$
154	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3Br_2-2,4$
155	0	0	$-CH(CH_3)_2$	$-C_6H_5$	$-C_6H_3Cl_2-2,6$
156	0	0	$-CH_2C(CH_3)_3$	$-C_6H_5$	$-C_6H_3Cl_2-3,4$
157	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CN-4$
158	0	0	$-CH_2C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH_2CH_3-4$
159	0	0	$-C(CH_3)_3$	$-C_6H_5$	
160	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4OC_6H_5-3$
161	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4(CH_2OC(O)CH_3)-3$

Ex. No.	X	X'	R^1	A	B
162	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH_2OH-4$
163	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CHO-4$
164	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CO_2H-4$
165	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_5$	$-C_6H_4OH-2$
166	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH=CCl_2-4$
167	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_5$	$-C_6H_4(OC(O)CH_3)-2$
168	0	0	$-C(CH_3)_3$	$-C_6H_3(OCH_3)_2-3,4$	$-C_6H_5$
169	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2Cl-2$	$-C_6H_4CH_2Cl-2$
170	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2Cl-2$	$-C_6H_5$
171	0	0	$-C(CH_3)_3$	$-C_6H_4NO_2-2$	$-C_6H_5$
172	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_2CH_3-4$	$-C_6H_5$
173	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3-2-CF_3-5$	$-C_6H_4CH_3-2$
174	0	0	$-C(CH_3)_3$	$-C_6H_4Br-2$	$-C_6H_4Br-2$
175	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3-4$	$-C_6H_4CH_2CH_3-3$
176	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH_2CH_2CH_3-4$
177	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_4Br-3$
178	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_3(CH_3)_2-3,5$
179	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4I-4$
180	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_4CH_2CH_3-4$
181	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3-4$	$-C_6H_4CH_2CH_3-4$
182	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_4CH_2CH_3-3$
183	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH(CH_3)_2-2$
184	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3-3$	$-C_6H_5$
185	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_5$	$-C_6H_4NO_2-3$
186	0	0	$-CH_2C(CH_3)_3$	$-C_6H_5$	$-C_6H_4NO_2-3$
187	0	0	$-CH_2C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH_3-3$
188	0	0	$-CH_2C(CH_3)_3$	$-C_6H_5$	$-C_6H_4Cl-4$
189	0	0	$-CH_2C(CH_3)_3$	$-C_6H_5$	$-C_6H_3(NO_2)_2-2,4$
190	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3-4$	$-C_6H_3Cl_2-2,4$
191	0	0	$-C(CH_3)_3$	$-C_6H_3Cl_2-3,4$	$-C_6H_4Cl-4$
192	0	0	$-C(CH_3)_3$	$-C_6H_4(CH_2)_6CH_3-4$	$-C_6H_4Cl-4$
193	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_2CH_3-4$	$-C_6H_4Cl-4$

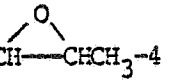
Ex. No.	X	X'	R^1	A	B
194	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_3$-4	$-C_6H_4CH_3$-3
195	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_3$-4	$-C_6H_5$
196	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_4CH_3$-3
197	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_4NO_2$-2
198	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_4CH_3$-4
199	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_4CH_2CH_3$-4
200	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3(CH_3)_2$-3,5
201	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3CH_3$-3-Cl-6
202	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4(OC(O)CH_3)$-3
203	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4OH$-3
204	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3NO_2$-2-CH_3-3
205	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_3$-4	$-C_6H_3(CH_3)_2$-3,5
206	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_3$-4	$-C_6H_3Cl_2$-2,4
207	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_3Cl_2$-2,6
208	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_4Br$-2
209	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_3F_2$-2,5
210	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_4OCH_3$-4
211	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_4CH_3$-2
212	0	0	$-C(CH_3)_3$	$-C_6H_4F$-2	$-C_6H_4Cl$-4
213	0	0	$-C(CH_3)_3$	$-C_6H_3Cl_2$-2,4	$-C_6H_4Cl$-4
214	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_3Cl_2$-2,4
215	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_4OCH_3$-3
216	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_4Cl$-3
217	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_4CF_3$-2
218	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_4CF_3$-3
219	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_4CF_3$-4
220	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3$-3	$-C_6H_5$
221	0	0	$-C(CH_3)_3$	$-C_6H_4NO_2$-3	$-C_6H_5$
222	0	0	$-C(CH_3)_3$	$-C_6H_3Cl_2$-2,6	$-C_6H_5$
223	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,4	$-C_6H_5$
224	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_4CN$-4
225	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-2	$-C_6H_4F$-4

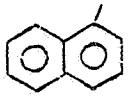
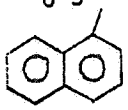
Ex. No.	X	X'	R^1	A	B
226	0	0	$-C(CH_3)_3$	$-C_6H_4Cl-2$	$-C_6H_4Br-4$
227	0	0	$-C(CH_3)_3$	$-C_6H_4Cl-2$	$-C_6H_4Cl-4$
228	0	0	$-C(CH_3)_3$	$-C_6H_4Cl-2$	$-C_6H_4OCH_3-2$
229	0	0	$-C(CH_3)_3$	$-C_6H_4Cl-2$	$-C_6H_4NO_2-4$
230	0	0	$-C(CH_3)_3$	$-C_6H_4Cl-2$	$-C_6H_4F-2$
231	0	0	$-C(CH_3)_3$	$-C_6H_4Cl-2$	$-C_6H_3F_2-2,6$
232	0	0	$-C(CH_3)_3$	$-C_6H_4NO_2-4$	$-C_6H_5$
233	0	0	$-C(CH_3)_3$	$-C_6H_4CN-4$	$-C_6H_5$
234	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_3-3$	$-C_6H_4OCH_3-3$
235	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_3-3$	$-C_6H_5$
236	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_3-3$	$-C_6H_4Cl-4$
237	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_3-3$	$-C_6H_4Cl_2-3,4$
238	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_3-2$	$-C_6H_5$
239	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_3-2$	$-C_6H_4CH_3-3$
240	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_3-2$	$-C_6H_3Cl_2-3,4$
241	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_3-2$	$-C_6H_4Cl-4$
242	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_3-2$	$-C_6H_4NO_2-2$
243	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4OCF_3-4$
244	0	0	$-C(CH_3)_3$	$-C_6H_4OCF_3-4$	$-C_6H_5$
245	0	0	$-C(CH_3)_3$	$-C_6H_4OCF_3-4$	$-C_6H_4CH_3-3$
246	0	0	$-C(CH_3)_3$	$-C_6H_4OCF_3-4$	$-C_6H_4Cl-4$
247	0	0	$-C(CH_3)_3$	$-C_6H_4OCF_3-4$	$-C_6H_3Cl_2-3,4$
248	0	0	$-C(CH_3)_3$	$-C_6H_4CF_3-4$	$-C_6H_4Cl-4$
249	0	0	$-C(CH_3)_3$	$-C_6H_4CF_3-4$	$-C_6H_4CH_3-3$
250	0	0	$-C(CH_3)_2CH_2CH_2CH_2CH_3$		
				$-C_6H_5$	$-C_6H_5$
251	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_2CH_3-4$	$-C_6H_4CH_3-3$
252	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_2CH_3-4$	$-C_6H_3(CH_3)_2-3,5$
253	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_2CH_3-4$	$-C_6H_5$
254	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3-4$	$-C_6H_3NO_2-2-Cl-4$
255	0	0	$-C(CH_3)_3$	$-C_6H_3Cl-3-OCH_3-4$	$-C_6H_5$
256	0	0	$-C(CH_3)_3$	$-C_6H_4SCH_3-4$	$-C_6H_5$

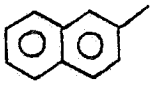
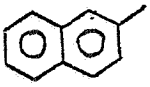
Ex. No.	X	X'	R^1	A	B
257	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_2CH_2CH_2CH_3-4$	$-C_6H_4Cl-4$
258	0	0	$-C(CH_3)_3$	$-C_6H_4SCH_3-2$	$-C_6H_5$
259	0	0	$-C(CH_3)_3$	$-C_6H_3NO_2-2-Cl-4$	$-C_6H_5$
260	0	0	$-C(CH_3)_3$	$-C_6H_3NO_2-2-Cl-4$	$-C_6H_3NO_2-2-Cl-4$
261	0	0	$-C(CH_3)_3$	$-C_6H_3NO_2-2-Cl-4$	$-C_6H_4C(CH_3)_3-4$
262	0	0	$-C(CH_3)_3$	$-C_6H_3NO_2-2-Cl-4$	$-C_6H_4Cl-4$
263	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_3CH_3-3-Cl-6$
264	0	0	$-C(CH_3)_3$	$-C_6H_3F_2-2,6$	$-C_6H_3F_2-2,6$
265	0	0	$-C(CH_3)_3$	$-C_6H_4OC_6H_5-4$	$-C_6H_5$
266	0	0	$-C(CH_3)_3$	$-C_6H_4OC_6H_5-4$	$-C_6H_4CH_3-4$
267	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_2CH_2CH_3-4$	$-C_6H_5$
268	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_2CH_2CH_3-4$	$-C_6H_4Cl-4$
269	0	0	$-C(CH_3)_3$	$-C_6H_4C(CH_3)_2-4$	$-C_6H_5$
270	0	0	$-C(CH_3)_3$	$-C_6H_4CH(CH_3)_2-4$	$-C_6H_4CH_3-3$
271	0	0	$-C(CH_3)_3$	$-C_6H_4OH-4$	$-C_6H_5$
272	0	0	$-C(CH_3)_3$	$-C_6H_4CN-4$	$-C_6H_5$
273	0	0	$-C(CH_3)_3$	$-C_6H_4CN-4$	$-C_6H_4CH_3-3$
274	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3-2-Cl-4$	$-C_6H_5$
275	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3-4$	$-C_6H_4OCF_3-4$
276	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6F_5-2,3,4,5,6$
277	0	0	$-C(CH_3)_3$	$-C_6F_5-2,3,4,5,6$	$-C_6H_5$
278	0	0	$-C(CH_3)_3$	$-C_6H_4CN-4$	$-C_6H_3Cl_2-3,4$
279	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3-2-Cl-4$	$-C_6H_4CH_3-3$
280	0	0	$-C(CH_3)_3$	$-C_6H_4CF_3-4$	$-C_6H_3(CH_3)_2-3,5$
281	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3-2-Cl-4$	$-C_6H_3(CH_3)_2-3,5$
282	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH=CH_2-3$
283	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3-4$	$-C_6H_4CH=CH_2-3$
284	0	0	$-C(CH_3)_3$	$-C_6H_4CF_3-4$	$-C_6H_4CH=CH_2-3$
285	0	0	$-C(CH_3)_3$	$-C_6H_4OH-4$	$-C_6H_4CH_3-3$

Ex. No.	X	X'	R^1	A	B
286	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_2CH=CH_2-4$	$-C_6H_4CH_3-3$
287	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_2CH_3-4$	$-C_6H_3Cl_2-3,4$
288	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_2CH_3-4$	$-C_6H_4CH_3-3$
289	0	0	$-C(CH_3)_3$	$-C_6H_4CH=CH_2-4$	$-C_6H_4CH=CH_2-4$
290	0	0	$-C(CH_3)_3$	$-C_6H_4CH=CH_2-4$	$-C_6H_4CH_3-3$
291	0	0	$-C(CH_3)_3$	$-C_6H_3F_2-2,6$	$-C_6H_3Cl_2-3,4$
292	0	0	$-C(CH_3)_3$	$-C_6H_3F_2-2,6$	$-C_6H_4CH_3-3$
293	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2Cl-2$	$-C_6H_4Cl-4$
294	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2N(CH_2CH_3)_2-2$	$-C_6H_4Cl-4$
295	0	0	$-C(CH_3)_2CH_2CH_3$	$-C_6H_5$	$-C_6H_5$
296	0	0	$-C(CH_3)_3$	$-C_6H_4Cl-4$	$-C_6H_4Br-2$
297	0	0	$-C(CH_3)_2CH_2CH_3$	$-C_6H_4CH_3-3$	$-C_6H_4CH_3-3$
298	0	0	$-C(CH_3)_2CH_2CH_3$	$-C_6H_4Br-2$	$-C_6H_4Br-2$
299	0	0	$-C(CH_3)_3$	$-C_6H_4Cl-4$	$-C_6H_3(CH_3)_2-3,5$
300	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_3-3$	$-C_6H_3(CH_3)_2-3,5$
301	0	0	$-C(CH_3)_3$	$-C_6H_4Cl-4$	$-C_6H_4F-4$
302	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3-4$	$-C_6H_3(CH_3)_2-3,5$
303	0	0	$-C(CH_3)_3$	$-C_6H_4CH=CH_2-4$	$-C_6H_3(CH_3)_2-3,5$
304	0	0	$-C(CH_3)_3$	$-C_6H_4(OC(O)CH_3)-4$	$-C_6H_3(CH_3)_2-3,5$
305	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2-3,5$	$-C_6H_5$
306	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2-3,5$	$-C_6H_4CH_3-3$
307	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2-3,5$	$-C_6H_4CH_2CH_3-4$
308	0	0	$-C(CH_3)_3$	$-C_6H_4CH=CHCH_3-4$	$-C_6H_4CH=CHCH_3-4$
309	0	0	$-C(CH_3)_3$	$-C_6H_4CH(CH_3)_2-4$	$-C_6H_3(CH_3)_2-3,5$
310	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3-4$	$-C_6H_4Br-2$
311	0	0	$-C(CH_3)_3$	$-C_6H_3Cl-3-CH_3-4$	$-C_6H_5$
312	0	0	$-C(CH_3)_3$	$-C_6H_3Cl-3-CH_3-4$	$-C_6H_4CH_3-3$
313	0	0	$-C(CH_3)_3$	$-C_6H_3Cl-3-CH_3-4$	$-C_6H_4Cl-4$
314	0	0	$-C(CH_3)_3$	$-C_6H_3Cl-3-CH_3-4$	$-C_6H_3Cl_2-3,4$
315	0	0	$-C(CH_3)_2CH_2CH_3$	$-C_6H_4CH_2CH_3-4$	$-C_6H_4NO_2-2$
316	0	0	$-C(CH_3)_3$	$-C_6H_3F_2-2,6$	$-C_6H_4Cl-2$

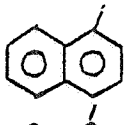
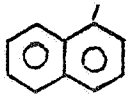
Ex. No.	X	X'	R^1	A	B
317	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,6	$-C_6H_4Cl$-3
318	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,6	$-C_6H_4Cl$-4
319	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,6	$-C_6H_3(CH_3)_2$-3,5
320	0	0	$-C(CH_3)_2CH_2CH_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3(CH_3)_2$-3,5
321	0	0	$-C(CH_3)_3$	$-C_6H_4CF_3$-3	$-C_6H_4Cl$-4
322	0	0	$-C(CH_3)_3$	$-C_6H_4CF_3$-3	$-C_6H_3(CH_3)_2$-3,5
323	S	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4Cl$-4
324	S	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4CH_3$-3
325	0	0	$-C(CH_3)_3$	$-C_6H_3NO_2$-2-OCH_3-3	$-C_6H_4CH_3$-3
326	0	0	$-C(CH_3)_3$	$-C_6H_3Br$-3-CH_3-4	$-C_6H_5$
327	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-4	$-C_6H_4CO_2CH_3$-4
328	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_4CO_2CH_3$-4
329	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4NH_2$-3
330	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4NH_2$-2
331	0	0	$-C(CH_3)_3$	$-C_6H_4F$-4	$-C_6H_5$
332	0	0	$-C(CH_3)C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_4NO_2$-2
333	0	0	$-C(CH_3)_3$	$-C_6H_4OH$-3	$-C_6H_5$
334	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3Cl_2$-3,5
335	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_2CH=CH_2$-3	$-C_6H_5$
336	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_3(CH_3)_2$-3,5
337	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_3NO_2$-2-CH_3-3
338	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_3NO_2$-2-CH_3-5
339	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_4CH_3$-3
340	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_4I$-2
341	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-4	$-C_6H_4F$-2
342	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3Cl_2$-3,4
343	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_4F$-2
344	0	0	$-C(CH_3)_3$	$-C_6H_4OC(O)N(CH_3)_2$-3	$-C_6H_5$
345	0	0	$-C(CH_3)_3$	$-C_6H_4OCO_2CH=CH_2$-3	$-C_6H_5$
346	0	0	$-C(CH_3)_3$	$-C_6H_4CO_2CH_3$-4	$-C_6H_4Cl$-4
347	0	0	$-C(CH_3)_3$	$-C_6H_4CO_2CH_3$-4	$-C_6H_3(CH_3)_2$-3,5

Ex. No.	X	X'	R^1	A	B
348	0	0	$-C(CH_3)_3$	$-C_6H_4CO_2CH_3$-4	$-C_6H_4CH_3$-3
349	0	0	$-C(CH_3)_3$	$-C_6H_4CO_2H$-4	$-C_6H_4CH_3$-3
350	0	0	$-C(CH_3)_3$	$-C_6H_3NH_2$-2-OCH_3-3	$-C_6H_4CH_3$-3
351	0	0	$-C(CH_3)_3$	$-C_6H_4NH_2$-4	$-C_6H_4Cl$-4
352	0	0	$-C(CH_3)_3$	$-C_6H_4NHCO_2CH_3$-4	$-C_6H_4Cl$-4
353	0	0	$-C(CH_3)_3$	$-C_6H_4NHC(O)CH_3$-4	$-C_6H_4Cl$-4
354	0	0	$-C(CH_3)_3$	$-C_6H_3NHC(O)CH_3$-2-OCH_3-3	$-C_6H_4CH_3$-3
355	0	0	$-C(CH_3)_3$	$-C_6H_4OC_6H_5$-3	$-C_6H_5$
356	0	0	$-C(CH_3)_3$	$-C_6H_4OC_6H_5$-3	$-C_6H_4CH_3$-3
357	0	0	$-C(CH_3)_3$	$-C_6H_4C(O)CH_3$-4	$-C_6H_4CH_3$-3
358	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_2OCH_3$-4	$-C_6H_5$
359	0	0	$-C(CH_3)_3$	$-C_6H_4OC(O)N(CH_3)_2$-4	$-C_6H_5$
360	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_2CO_2CH_3$-4	$-C_6H_5$
361	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2OC(O)CH_3$-4	$-C_6H_5$
362	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2SCN$-4	$-C_6H_5$
363	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2OH$-4	$-C_6H_5$
364	0	0	$-C(CH_3)_3$	$-C_6H_4Br$-4	$-C_6H_4Br$-4
365	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_2SCH_3$-4	$-C_6H_5$
366	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_2C(CH_3)_2$-4	$-C_6H_5$
367	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CN$-4	$-C_6H_5$
368	0	0	$-C(CH_3)_3$		$-C_6H_5$
369	0	0	$-C(CH_3)_3$	$-C_6H_4C(CH_3)=NNHC(O)NH_2$-4	$-C_6H_4CH_3$-3
370	0	0	$-C(CH_3)_3$	$-C_6H_4C_6H_5$-4	$-C_6H_4CH_3$-3
371	0	0	$-C(CH_3)_3$	$-C_6H_4CN$-3	$-C_6H_4CH_3$-3
372	0	0	$-C(CH_3)_3$	$-C_6H_4NH_2$-3	$-C_6H_4CH_3$-3
373	0	0	$-C(CH_3)_3$	$-C_6H_4C(O)NHC(CH_3)_2CH_2OH$-4	$-C_6H_4CH_3$-3
374	0	0	$-C(CH_3)_3$	$-C_6H_4CH(OH)CH_3$-4	$-C_6H_4CH_3$-3

Ex. No.	X	X'	R^1	A	B
375	0	0	$-C(CH_3)_3$	$-C_6H_4NHC(O)C(CH_3)=CH_2$-3	$-C_6H_4CH_3$-3
376	0	0	$-C(CH_3)_3$	$-C_6H_4CO_2H$-3	$-C_6H_4CH_3$-3
377	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2Cl$-3	$-C_6H_4CH_3$-3
378	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3(CH_3)_2$-2,3
379	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_4CH_3$-3
380	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3(CH_3)_2$-2,3
381	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_3(CH_3)_2$-2,3
382	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_4CH_3$-2
383	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_4CF_3$-2
384	0	0	$-CH(CH_3)CH_2C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_5$
385	0	0	$-C(CH_3)_3$	$-C_6H_4OCH_2OCH_3$-4	$-C_6H_4CH_3$-3
386	0	0	$-C(CH_3)_3$	$-C_6H_4C(CH_3)=CH_2$-4	$-C_6H_4CH_3$-3
387	0	0	$-C(CH_3)_3$	$-C_6H_5$	
388	0	0	$-C(CH_3)_3$		$-C_6H_4CH_3$-3
389	0	0	$-C(CH_3)_3$	$-C_6H_4NCS$-4	$-C_6H_4CH_3$-3
390	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-3,5	$-C_6H_3(CH_3)_2$-3,5
391	0	0	$-C(CH_3)_3$	$-C_6H_3Cl_2$-2,4	$-C_6H_3Cl_2$-2,4
392	0	0	$-C(CH_3)_3$	$-C_6H_4F$-2	$-C_6H_4Br$-2
393	0	0	$-C(CH_3)_3$	$-C_6H_4F$-2	$-C_6H_4CH_3$-3
394	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_3(CH_3)_2$-2,3
395	0	0	$-C(CH_3)_3$	$-C_6H_4F$-2	$-C_6H_4NO_2$-2
396	0	0	$-C(CH_3)_3$	$-C_6H_4F$-2	$-C_6H_5$
397	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-Cl-3	$-C_6H_4CH_3$-3
398	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-Cl-3	$-C_6H_5$
399	0	0	$-CH(CH_3)CH_2C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_3(CH_3)_2$-3,5

Ex. No.	X	X'	R^1	A	B
400	0	0	$-CH(CH_3)CH_2C(CH_3)_3$		
				$-C_6H_4CH_3$-4	$-C_6H_3Cl_2$-3,4
401	0	0	$-C(CH_3)_3$	$-C_6H_4Br$-4	$-C_6H_5$
402	0	0	$-C(CH_3)_3$	$-C_6H_3Cl_2$-2,3	$-C_6H_4Br$-2
403	0	0	$-C(CH_3)_3$	$-C_6H_3Cl_2$-2,3	$-C_6H_5$
404	0	0	$-C(CH_3)_3$	$-C_6H_4F$-2	$-C_6H_3(CH_3)_2$-3,5
405	0	0	$-C(CH_3)_3$	$-C_6H_3Cl_2$-2,3	$-C_6H_4CH_3$-3
406	0	0	$-C(CH_3)_3$	$-C_6H_5$	
407	0	0	$-C(CH_3)_3$		$-C_6H_4CH_3$-3
408	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_4OCF_3$-3
409	0	0	$-C(CH_3)_3$	$-C_6H_4NCS$-4	$-C_6H_5$
410	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,6	$-C_6H_3Cl_2$-2,4
411	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,6	$-C_6H_3Cl_2$-3,5
412	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_3(CF_3)_2$-3,5
413	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3(CF_3)_2$-3,5
414	0	0	$-CH(CH_3)C(CH_3)(CH_2CH_3)_2$		
				$-C_6H_4CH_3$-4	$-C_6H_5$
415	0	0	$-CH(CH_3)C(CH_3)(CH_2CH_3)_2$		
				$-C_6H_4CH_3$-4	$-C_6H_3(CH_3)_2$-3,5
416	0	0	$-CH(CH_3)C(CH_3)(CH_2CH_3)_2$		
				$-C_6H_4CH_3$-4	$-C_6H_4NO_2$-2
417	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3(CH_3)_2$-3,5
418	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3NO_2$-2-CH_3-5
419	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3Cl$-3-F-4
420	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-4	$-C_6H_3Cl$-3-F-4
421	0	0	$-CH(CH_3)_2$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3(CH_3)_2$-3,5
422	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-4	$-C_6H_3(CF_3)_2$-3,5
423	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_3Cl_2$-3,4

Ex. No.	X	X'	R^1	A	B
424	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3$-4	$-C_6H_3CH_3$-2-Cl-3
425	0	0	$-C(CH_3)_3$	$-C_6H_3$Cl-3-F-4	$-C_6H_5$
426	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,6	$-C_6H_4CH_3$-3
427	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,6	$-C_6H_3(CH_3)_2$-3,5
428	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_4$Br-2
429	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_3(CH_3)_2$-3,5
430	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_4$Cl-3
431	0	0	$-C(CH_3)_3$	$-C_6H_4OCF_3$-3	$-C_6H_5$
432	0	0	$-C(CH_3)_3$	$-C_6H_4OCF_3$-3	$-C_6H_4CH_3$-3
433	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_3CH_3$-2-Cl-3
434	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3Cl_2$-2,4
435	0	0	$-CH(CH_3)C(CH_3)(CH_2CH_3)_2$	$-C_6H_4CH_3$-4	$-C_6H_3NO_2$-2-CH_3-5
436	0	0	$-CH(CH_3)C(CH_3)(CH_2CH_3)_2$	$-C_6H_4CH_3$-4	$-C_6H_3NO_2$-2-CH_3-3
437	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,6	$-C_6H_4$Br-2
438	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-Cl-3	$-C_6H_3(CH_3)_2$-3,5
439	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-Cl-3	$-C_6H_3$Cl-3-F-4
440	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_3$Cl-3-F-4
441	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3$Cl-3-F-4
442	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-3,4	$-C_6H_5$
443	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-3,4	$-C_6H_4CH_3$-3
444	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-3,4	$-C_6H_4$Cl-2
445	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-3,4	$-C_6H_3Cl_2$-2,4
446	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-3,4	$-C_6H_4$Br-2
447	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-3,4	$-C_6H_3(CH_3)_2$-3,5
448	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-3,4	$-C_6H_4NO_2$-2
449	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-3,4	$-C_6H_3(CH_3)_2$-3,4
450	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3(CH_3)_2$-3,4
451	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3(CH_3)_2$-3,4
452	0	0	$-C(CH_3)_3$	$-C_6H_3$F-2-Cl-6	$-C_6H_4CH_3$-3

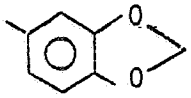
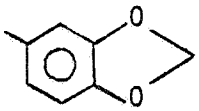
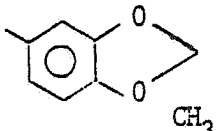
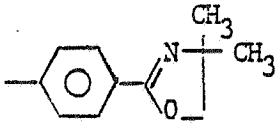
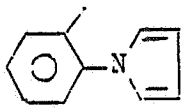
Ex. No.	X	X'	R^1	A	B
453	0	0	$-CH(CH_2CH_3)C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_5$
454	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2Cl-4$	$-C_6H_5$
455	0	0	$-C(CH_3)_3$	$-C_6H_3(OCH_3)_2-2,3$	$-C_6H_5$
456	0	0	$-C(CH_3)_3$	$-C_6H_3(OCH_3)_2-2,3$	$-C_6H_4Cl-4$
457	0	0	$-C(CH_3)_3$	$-C_6H_3(OCH_3)_2-2,3$	$-C_6H_4Br-2$
458	0	0	$-C(CH_3)_3$	$-C_6H_3Cl-3-F-4$	$-C_6H_3Cl_2-3,4$
459	0	0	$-C(CH_3)_3$	$-C_6H_4C(CH_3)_3-4$	$-C_6H_3(CH_3)_2-3,4$
460	0	0	$-C(CH_3)_3$	$-C_6H_4C(CH_3)_3-4$	$-C_6H_3(CH_3)_2-3,5$
461	0	0	$-C(CH_3)_3$	$-C_6H_4C(CH_3)_3-4$	$-C_6H_3Cl_2-2,4$
462	0	0	$-C(CH_3)_3$	$-C_6H_4C(CH_3)_3-4$	$-C_6H_4NO_2-2$
463	0	0	$-C(CH_3)_3$	$-C_6H_4C(CH_3)_3-4$	$-C_6H_4Br-2$
464	0	0	$-C(CH_3)_3$	$-C_6H_4C(CH_3)_3-4$	$-C_6H_4CH_3-3$
465	0	0	$-C(CH_3)_3$	$-C_6H_4C(CH_3)_3-4$	$-C_6H_4Cl-2$
466	0	0	$-C(CH_3)_3$	$-C_6H_4C(CH_3)_3-4$	$-C_6H_3Cl_2-3,4$
467	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2-3,4$	$-C_6H_3Cl_2-3,4$
468	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2-3,4$	$-C_6H_4F-4$
469	0	0	$-C(CH_3)_3$	$-C_6H_4C(CH_3)_3-4$	$-C_6H_4F-4$
470	0	0	$-CH(CH_2CH_3)C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_4NO_2-2$
471	0	0	$-CH(CH_2CH_3)C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_3NO_2-2-CH_3-5$
472	0	0	$-CH(CH_2CH_3)C(CH_3)_3$	$-C_6H_4CH_3-4$	$-C_6H_3(CH_3)_2-3,5$
473	0	0	$-C(CH_3)_3$	$-C_6H_3NH_2-2-OCH_3-3$	$-C_6H_5$
474	0	0	$-C(CH_3)_3$		$-C_6H_3Cl_2-2,4$
475	0	0	$-C(CH_3)_3$		$-C_6H_4Br-2$
476	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3-2-NO_2-3$	$-C_6H_5$
477	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3-2-NO_2-3$	$-C_6H_4CH_3-3$
478	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3-2-NO_2-3$	$-C_6H_4Cl-4$

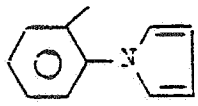
Ex. No.	X	X'	R^1	A	B
479	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-NO_2-3	$-C_6H_3Cl_2$-2,4
480	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-Br-3	$-C_6H_5$
481	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-Br-3	$-C_6H_4CH_3$-3
482	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-Br-3	$-C_6H_4Cl$-4
483	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-Br-3	$-C_6H_3Cl_2$-2,4
484	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-NH_2-3	$-C_6H_4CH_3$-3
485	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3$-2	$-C_6H_4Br$-2
486	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3$-2	$-C_6H_4NO_2$-2
487	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3$-2	$-C_6H_4Cl$-3
488	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3$-2	$-C_6H_4Cl$-4
489	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3$-2	$-C_6H_4CH_3$-3
490	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3$-2	$-C_6H_3(CH_3)_2$-3,5
491	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3$-2	$-C_6H_3Cl_2$-3,4
492	0	0	$-C(CH_3)_3$	$-C_6H_4CH_3$-2	$-C_6H_3Cl_2$-3,5
493	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-F-3	$-C_6H_5$
494	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-F-3	$-C_6H_4CH_3$-3
495	0	0	$-C(CH_3)_3$	$-C_6H_3F$-2-Cl-6	$-C_6H_5$
496	0	0	$-C(CH_3)_3$	$-C_6H_3F$-2-Cl-6	$-C_6H_3Cl_2$-2,4
497	0	0	$-C(CH_3)_3$	$-C_6H_3F$-2-Cl-6	$-C_6H_4F$-4
498	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_2Cl$-4	$-C_6H_3(CH_3)_2$-3,5
499	0	0	$-C(CH_3)_3$	$-C_6H_2F_3$-2,4,6	$-C_6H_5$
500	0	0	$-C(CH_3)_3$	$-C_6H_2F_3$-2,4,6	$-C_6H_3Cl_2$-2,4
501	0	0	$-C(CH_3)_3$	$-C_6H_2F_3$-2,4,6	$-C_6H_4Br$-2
502	0	0	$-C(CH_3)_3$	$-C_6H_2F_3$-2,4,6	$-C_6H_3(CH_3)_2$-3,5
503	0	0	$-C(CH_3)_3$	$-C_6H_3NO_2$-2-Cl-3	$-C_6H_5$
504	0	0	$-C(CH_3)_3$	$-C_6H_3NO_2$-2-Cl-3	$-C_6H_4Br$-2
505	0	0	$-C(CH_3)_3$	$-C_6H_3NO_2$-2-Cl-3	$-C_6H_4NO_2$-2
506	0	0	$-C(CH_3)_3$	$-C_6H_3NO_2$-2-Cl-3	$-C_6H_4CH_3$-3
507	0	0	$-C(CH_3)_3$	$-C_6H_3NO_2$-2-Cl-3	$-C_6H_4Cl$-3
508	0	0	$-C(CH_3)_3$	$-C_6H_3NO_2$-2-Cl-3	$-C_6H_3Cl_2$-2,4
509	0	0	$-C(CH_3)_3$	$-C_6H_3NO_2$-2-Cl-3	$-C_6H_3Cl_2$-3,5
510	0	0	$-C(CH_3)_3$	$-C_6H_3NO_2$-2-Cl-3	$-C_6H_3(CH_3)_2$-3,5

Ex. No.	X	X'	R^1	A	B
511	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3F_2$-2,3
512	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3Cl_2$-2,3
513	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,3	$-C_6H_5$
514	0	0	$-C(CH_3)_3$	$-C_6H_3Cl_2$-2,3	$-C_6H_4NO_2$-2
515	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3F_2$-2,3
516	0	0	$-C(CH_3)_3$	$-C_6H_3Cl_2$-2,3	$-C_6H_3(CH_3)_2$-3,5
517	0	0	$-C(CH_3)_3$	$-C_6H_3Cl_2$-2,3	$-C_6H_3Cl_2$-2,4
518	0	0	$-C(CH_3)_3$	$-C_6H_3Cl_2$-2,3	$-C_6H_3Cl_2$-3,5
519	0	0	$-C(CH_3)_3$	$-C_6H_3Cl_2$-2,3	$-C_6H_4Cl$-3
520	0	0	$-C(CH_3)_3$	$-C_6H_3Cl_2$-2,3	$-C_6H_3(CH_3)_2$-2,3
521	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,3	$-C_6H_4Br$-2
522	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_4Cl$-4
523	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_3Cl_2$-2,4
524	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_3F_2$-2,6
525	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_3F_2$-2,4
526	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_4OCH_3$-3
527	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_4OCH_3$-2
528	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_4CH_3$-2
529	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_4CH_3$-4
530	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-Cl-3	$-C_6H_3Cl_2$-2,4
531	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_2Cl$-4	$-C_6H_5$
532	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_2Cl$-4	$-C_6H_3Cl_2$-2,4
533	0	0	$-C(CH_3)_3$	$-C_6H_3F$-3-CH_3-4	$-C_6H_3(CH_3)_2$-3,5
534	0	0	$-C(CH_3)_3$	$-C_6H_3F$-3-CH_3-4	$-C_6H_3F_2$-3,5
535	0	0	$-C(CH_3)_3$	$-C_6H_5F$-3-CH_3-4	$-C_6H_4CH_3$-3
536	0	0	$-C(CH_3)_3$	$-C_6H_3F$-3-CH_3-4	$-C_6H_3Cl_2$-3,5
537	0	0	$-C(CH_3)_3$	$-C_6H_3F$-3-CH_3-4	$-C_6H_4NO_2$-2
538	0	0	$-C(CH_3)_3$	$-C_6H_3F$-3-CH_3-4	$-C_6H_3Cl_2$2,4
539	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3F_2$-3,5
540	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_4I$-2
541	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_2OH$-4	$-C_6H_3(CH_3)_2$-3,5
542	0	0	$-C(CH_3)_3$	$-C_6H_2F_2$-2,6-CH_3-3	$-C_6H_5$

Ex. No.	X	X'	R^1	A	B
543	0	0	$-C(CH_3)_3$	$-C_6H_2F_2$-2,6-$CH_3$3	$-C_6H_4CH_3$-3
544	0	0	$-C(CH_3)_3$	$-C_6H_2F_2$-2,6-CH_3-3	$-C_6H_3Cl_2$-2,4
545	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-4	$-C_6H_3(CH_3)_2$-2,3
546	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_3(CH_3)_2$-3,5
547	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_4CH_3$-3
548	0	0	$-C(CH_3)_3$	$-C_6H_3F$-2-Cl-6	$-C_6H_3F_2$-2,3
549	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,3	$-C_6H_4NO_2$-2
550	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,3	$-C_6H_4CH_3$-3
551	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,3	$-C_6H_3(CH_3)_2$-3,5
552	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,3	$-C_6H_3Cl_2$-2,4
553	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_3F_2$-2,3
554	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_3Cl_2$-2,3
555	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_3(CH_3)_2$-3,4
556	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_4NO_2$-2
557	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3$-4	$-C_6H_3CH_3$-2-Cl-5
558	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_5$
559	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3CH_3$-2-Cl-5
560	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,6	$-C_6H_3CH_3$-2-Cl-5
561	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_3CH_3$-2-Cl-5
562	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-Cl-3	$-C_6H_3CH_3$-2-Cl-5
563	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,6	$-C_6H_3Cl$-2-CH_3-5
564	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_3Cl$-2-CH_3-5
565	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-Cl-3	$-C_6H_3Cl$-2-CH_3-5
566	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-4	$-C_6H_3CH_3$-2-Cl-5
567	0	0	$-C(CH_3)_3$	$-C_6H_4Cl$-4	$-C_6H_3Cl$-2-CH_3-5
568	0	0	$-C(CH_3)_3$	$-C_6H_3F$-2-Cl-4	$-C_6H_5$
569	0	0	$-C(CH_3)_3$	$-C_6H_3F$-2-Cl-4	$-C_6H_4CH_3$-3
570	0	0	$-C(CH_3)_3$	$-C_6H_3F$-2-Cl-4	$-C_6H_3(CH_3)_2$-3,5
571	0	0	$-C(CH_3)_3$	$-C_6H_3F$-2-Cl-4	$-C_6H_3Cl_2$-3,5
572	0	0	$-C(CH_3)_3$	$-C_6H_3F$-2-Cl-4	$-C_6H_4Br$-2
573	0	0	$-C(CH_3)_3$	$-C_6H_3F$-2-Cl-4	$-C_6H_4NO_2$-2
574	0	0	$-C(CH_3)_3$	$-C_6H_3Cl$-2-CH_3-3	$-C_6H_3Cl_2$-2,4

Ex. No.	X	X'	R^1	A	B
575	0	0	$-C(CH_3)_3$	$-C_6H_3Cl-2-CH_3-3$	$-C_6H_5$
576	0	0	$-C(CH_3)_3$	$-C_6H_3Cl-2-CH_3-3$	$-C_6H_4CH_3-3$
577	0	0	$-C(CH_3)_3$	$-C_6H_3Cl-2-CH_3-3$	$-C_6H_3(CH_3)_2-3,5$
578	0	0	$-C(CH_3)_3$	$-C_6H_3Cl-2-CH_3-3$	$-C_6H_3Cl_2-3,5$
579	0	0	$-C(CH_3)_3$	$-C_6H_3Br-2-CH_3-3$	$-C_6H_3(CH_3)_2-3,5$
580	0	0	$-C(CH_3)_3$	$-C_6H_3Br-2-CH_3-3$	$-C_6H_3Cl_2-2,4$
581	0	0	$-C(CH_3)_3$	$-C_6H_3Br-2-CH_3-3$	$-C_6H_4CH_3-3$
582	0	0	$-C(CH_3)_3$	$-C_6H_3Br-2-CH_3-3$	$-C_6H_3Cl_2-3,5$
583	0	0	$-C(CH_3)_3$	$-C_6H_3Br-2-CH_3-3$	$-C_6H_4Br-2$
584	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2-2,3$	$-C_6H_4Cl-2$
585	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2-2,3$	$-C_6H_4CF_3-2$
586	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2-2,3$	$-C_6H_4CH_2CH_3-4$
587	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2-2,3$	$-C_6H_3Cl_2-3,5$
588	0	0	$-C(CH_3)_3$	$-C_6H_3F_2-2,6$	$-C_6H_3Cl-3-F-4$
589	0	0	$-C(CH_3)_3$	$-C_6H_4Cl-4$	$-C_6H_3F_2-3,5$
590	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2-2,3$	$-C_6H_3F_2-3,5$
591	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3-2-Cl-3$	$-C_6H_3F_2-3,5$
592	0	0	$-C(CH_3)_3$	$-C_6H_5$	$-C_6H_3F_2-3,5$
593	0	0	$-C(CH_3)_3$	$-C_6H_4CH_2CH_3-4$	$-C_6H_3(CH_3)_2-2,5$
594	0	0	$-C(CH_3)_3$	$-C_6H_3F_2-2,6$	$-C_6H_3F_2-3,5$
595	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3-2-Cl-3$	$-C_6H_3Cl_2-3,5$
596	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2-2,3$	$-C_6H_3(CH_3)_2-2,5$
597	0	0	$-C(CH_3)_3$	$-C_6H_4Br-2$	$-C_6H_3(CH_3)_2-3,5$
598	0	0	$-C(CH_3)_3$	$-C_6H_3Br-2-CH_3-3$	$-C_6H_4Cl-3$
599	0	0	$-C(CH_3)_3$	$-C_6H_3Cl-2-CH_3-3$	$-C_6H_4Cl-3$
600	0	0	$-C(CH_3)_3$	$-C_6H_3Br-2-CH_3-3$	$-C_6H_4NO_2-2$
601	0	0	$-C(CH_3)_3$	$-C_6H_3Cl-2-CH_3-3$	$-C_6H_4NO_2-2$
602	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2-2,3$	$-C_6H_3NO_2-2-CH_3-3$
603	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2-2,3$	$-C_6H_3NO_2-2-CH_3-5$
604	0	0	$-C(CH_3)_3$	$-C_6H_3F_2-2,6$	$-C_6H_5$
605	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2-2,6$	$-C_6H_3Cl_2-2,4$
606	0	0	$-C(CH_3)_3$	$-C_6H_2(CH_3)_3-2,4,6$	$-C_6H_3(CH_3)_2-3,5$

Ex. No.	X	X'	R^1	A	B
607	0	0	$-C(CH_3)_3$	$-C_6H_2(CH_3)_3$-2,4,6	$-C_6H_3Cl_2$-2,4
608	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,6	$-C_6H_4CH_3$-4
609	0	0	$-C(CH_3)_3$	$-C_6H_3F_2$-2,6	$-C_6H_3Cl_2$-2,5
610	0	0	$-C(CH_3)_3$	$-C_6H_2(CH_3)_3$-2,4,6	$-C_6H_4Cl$-4
611	0	0	$-C(CH_3)_3$	$-C_6H_2(CH_3)_3$-2,4,6	$-C_6H_4CH_3$-3
612	0	0	$-C(CH_3)_3$	$-C_6H_2(CH_3)_3$-2,4,6	$-C_6H_3Cl_2$-3,4
613	0	0	$-C(CH_3)_3$	$-C_6H_4OC(O)CH_3$-2	$-C_6H_4OC(O)CH_3$-2
614	0	0	$-C(CH_3)_3$	$-C_6H_4OH$-2	$-C_6H_4OH$-2
615	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,4	$-C_6H_4CH_3$-3
616	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,4	$-C_6H_3Cl_2$-2,4
617	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,4	$-C_6H_3(CH_3)_2$-3,5
618	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,4	$-C_6H_3Cl_2$-3,5
619	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,4	$-C_6H_4Br$-3
620	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,4	$-C_6H_3Cl_2$-3,4
621	0	0	$-C(CH_3)_3$	$-C_6H_3Br$-2-CH_3-3	$-C_6H_5$
622	0	0	$-C(CH_3)_3$		$-C_6H_5$
623	0	0	$-C(CH_3)_3$		$-C_6H_4Cl$-4
624	0	0	$-C(CH_3)_3$		$-C_6H_4CH_3$-3
625	0	0	$-C(CH_3)_3$		$-C_6H_4CH_3$-3
626	0	0	$-C(CH_3)_3$		$-C_6H_5$

Ex. No.	X	X'	R^1	A	B
627	0	0	$-C(CH_3)_3$		$-C_6H_4CH_3$-3
628	0	0	$-C(CH_3)_3$	$-C_6H_3(CH_3)_2$-2,3	$-C_6H_3Br$-2-Cl-5
629	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-Cl-3	$-C_6H_4Cl$-3
630	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-Cl-3	$-C_6H_4F$-3
631	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-Cl-3	$-C_6H_4Br$-2
632	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-Cl-3	$-C_6H_3CH_3$-2-Cl-3
633	0	0	$-C(CH_3)_3$	$-C_6H_3CH_3$-2-Cl-3	$-C_6H_2(CH_3)_2$-3,5-Cl-4
634	0	0	$-CH(CH_3)C(CH_3)_3$	$-C_6H_5$	$-C_6H_3CH_3$-2-Cl-3

EXAMPLE NO. 1 -Preparation of N'-t-butyl-N,N'-(4-chlorobenzoyl)hydrazine

A suspension of t-butylhydrazine hydrochloride (12.5 g, 0.1 mole) in toluene (100 ml) at 0-5°C was treated slowly with 1 equivalent of NaOH solution, prepared from diluting 8 g of 50% NaOH commercially available solution to 20 ml of the volume with H_2O. At 0 to 5°C with mechanical stirring, 2 equivalents of 4-chlorobenzoyl chloride (35.9 g, 0.2 mole) and 2 equivalents of NaOH (16 g of 50% NaOH diluted with H_2O to 40 ml) were added dropwise separately and simultaneously from dropping funnels. The exothermic reaction was cooled down by an ice-water bath through the entire addition. After the addition was completed, the resulting suspension was stirred at room temperature (RT) for one hour. The white precipitate (p.p.t.) was collected by suction-filtration and washed with a small amount of toluene and 100 ml of H_2O. The material was then air-dried, then crystallized from 95% aqueous CH_3OH to afford 24.65 g of N'-t-butyl-N,N'-(4-chlorobenzoyl)hydrazine as needles: m.p. 246-248°C

Additional product can be obtained by concentrating the mother liquid of crystallization.

EXAMPLE NO. 3 -Preparation of N'-t -butyl-N,N'-dibenzoylhydrazine

To a stirred suspension of t-butylhydrazine hydrochloride (1.24 g, 10 mmoles) in toluene (50 ml) at room temperature, was added dropwise a solution of 50% aqueous sodium hydroxide (0.8 g, 10 ml). After 15 minutes, the reaction mixture was cooled to 5°C and solutions of benzoyl chloride (2.82 gm, 20 ml) in toluene (7 ml) and 50% aqueous sodium hydroxide (1.6 g) were added dropwise and simultaneously from separate addition funnels while maintaining the temperature below 10°C. Following the addition, the reaction mixture was warmed to room temperature and stirred for 1 hr. The reaction mixture was diluted with ether and the product isolated by filtration. The product was washed with water and ether and dried. The product was recrystallized from ethermethanol to afford N'-t-butyl-N,N'-dibenzoylhydrazine as a white powder: m.p. 174-176°C.

EXAMPLE NO. 16 -Preparation of N'-t-butyl-N'-(4-chlorobenzoyl)-N-benzoylhydrazine

To a stirred suspension of t-butylhydrazine hydrochloride (1.24 g, 10 mmoles) in toluene (30 ml) at room temperature was added dropwise a 50% aqueous solution of sodium hydroxide (0.8 g, 10 mmole). After 15 min., the reaction mixture was cooled to 5°C and a solution of benzoyl chloride (1.42 g 10 mmoles) in toluene (5 ml) and a solution of aqueous 50% sodium hydroxide (0.8 g, 10 mmole) were added dropwise simultaneously from separate addition funnels while maintaining the temperature at or below

10°C. Following the addition, the reaction mixture was warmed to room temperature and stirred for 1 hr. The reaction mixture was diluted with toluene washed with water. The organic layer was separated, dried over anhydrous magnesium sulfate, and the solvent removed under vacuum to afford a yellow oil which slowly solidifies on standing. The product was recrystallized from etherhexane to afford white crystals.

To a stirred solution of the monobenzoylated compound (1.92 g, 10 mmoles) in toluene (30 ml) at 5°C, were added dropwise simultaneously from separate addition funnels, solutions of p-chlorobenzoyl chloride - (1.75 g, 10 mmoles) in toluene (5 ml) and aqueous 50% sodium hydroxide solution (0.8 g) while maintaining the temperature below 10°C. Following the addition, the reaction mixture was warmed to room temperature and stirred for 1 hr. The mixture was then diluted with hexane and the precipitated product isolated by filtration. The product was washed with water and hexane and dried. The crude product was recrystallized from ether-methanol to afford N'-t-butyl-N'-(4-chlorobenzoyl)-N-benzoylhydrazine as a white powder: m.p. 201-204°C.

EXAMPLE NO. 44 -Preparation of N'-neopentyl-N,N'-dibenzoylhydrazine

A solution of benzoylhydrazine (1.36 g, 10 mmoles), 1,1,1-trimethylacetaldehyde (0.86 g, 10 mmoles), and acetic acid (catalytic amount) in methanol are stirred at room temperature until hydrazone formation is complete. The reaction mixture is brought to a pH of 4 and sodium cyanoborohydride (0.75 g, 12.5 mmoles) is added slowly portionwise (the reaction is connected to an aqueous sodium hydroxide trap). Upon completion, the reaction is diluted with excess aqueous sodium hydroxide and the methanol is removed under vacuum. The product is partitioned into methylene chloride and washed with aqueous base and water. The organic layer is separated and dried over anhydrous magnesium sulfate. The magnesium sulfate is filtered, and the methylene chloride removed under vacuum to afford the product as a yellow oil which solidifies on standing. The crude 2-neopentyl-1-benzoylhydrazine is benzoylated directly.

To a stirred solution of the 2-neopentyl-1-benzoylhydrazine in toluene (40 ml) at 5°C, were added dropwise and simultaneously solutions of benzoyl chloride (1.4 g, 10 mmoles) in toluene (5 ml) and aqueous 50% sodium hydroxide solution (0.8 g) while maintaining the temperature below 10°C. After the addition, the reaction mixture was warmed to room temperature and stirred for 1 hour. The reaction mixture was diluted with hexane and the precipitated product isolated by filtration. The product was washed with water and hexane and dried. The crude product was recrystallized from methanol to afford N'-neopentyl-N,N'-dibenzoylhydrazine as a white powder: m.p. 237-239°C.

EXAMPLE NO. 102 -Preparation of N'-t-butyl-N'-benzoyl-N-4-chlorothiobenzoylhydrazine

A mixture of 4-chloro-methylthio-thiobenzoate (3.0 g, 0.015 mol) and t-butyl hydrazine hydrochloride - (2.0 g, 0.016 mol) in 5 ml of pyridine was heated at 90°C for 18 hours. The mixture was poured into 0.1 N HCl/ether. The layers were separated and the organic extracts were washed with 3 portions of 0.1 N HCl followed by saturated aqueous NaHCO. After the extracts were dried over anhydrous magnesium sulfate, the solvents were removed under vacuum to afford 1.9 g of a brown solid. Chromatography on silica gel using ether (25%)-methylene chloride (25%)-hexane as eluant afforded 0.8 g of a golden yellow solid. The solid was dissolved in 3 ml of methylene chloride and treated with pyridine (1 ml) and benzoyl chloride (0.6 ml). After 24 hours at 23°C, the reaction mixture was poured onto 0.1 N HCl/ether. The organic layer was washed with saturated aqueous sodium bicarbonate and was dried over anhydrous magnesium sulfate. Evaporation of solvents gave a yellow oil which was chromatographed on silica gel using ether (25%)-methylene chloride (25%)-hexane as eluant to give 0.15 g of N'-t-butyl-N'-benzoyl-N-4-chlorothiobenzoyl-hydrazine as a yellow solid: m.p. 160-162°C.

EXAMPLE NO. 103 -Preparation of N'-t-butyl-N'-thiobenzoyl-N-benzoylhydrazine

A mixture of N'-t-butyl-N-benzoyl hydrazine (60% purity, 1.0 g, 0.0031 mol) and S-(thiobenzoyl)-thioglycolic acid (1.0 g, 0.0047 mol) in 3 ml of pyridine was heated at about 90°C for 24 hours. The dark colored mixture was cooled and poured into 0.1 N HCl/ether. The organic layer was washed with three 15 ml portions of 0.1 N HCl followed by saturated aqueous sodium bicarbonate. The organic extracts were

dried over anhydrous magnesium sulfate. Evaporation of the solvents afforded 0.5 g of a brown oil which was recrystallized from ether-hexane to yield 0.2 g of N'-t-butyl-N'-thiobenzoyl-N-benzoylhydrazine as a tan solid m.p. 169-171°C.

EXAMPLE NO. 148 -Preparation of N'-t-butyl-N-(2-hydroxymethylbenzoyl)-N'-benzoylhydrazine

t -Butylhydrazine (0.1 mol) in 75 ml ethanol was treated with 50% aqueous sodium hydroxide (0.11 mol). Phthalide (0.1 mol) was added and the mixture was refluxed for 5 days. After cooling, water was added and the crude product was isolated by filtration. Filtration through silica gel afforded N'-t -butyl-N-(2-hydroxymethylbenzoyl)hydrazine (3.0 g). m.p. 116-118°C.

0.7 g of N'-t-butyl-N-(2-hydroxymethylbenzoyl)hydrazine and 1.1 g benzoyl chloride are combined in 10 ml of 5% NaOH and stirred at room temperature for 1.5 hours. The solids are filtered off, washed with water, then ether, to afford 0.6 g of white solid N'-t-butyl-N-(2-(benzoyloxymethyl)benzoyl)-N'-benzoyl-hydrazine. m.p. 190-191°C.

EXAMPLE NO. 220 -Preparation of N-(3-toluoyl)-N'-t-butyl-N'-benzoylhydrazine

Step 1

To a stirred suspension of t-butylhydrazine (51 g) in a mixture of dioxane and water (2:1) (150 ml) was added sodium hydroxide (32 g of a 50% aqueous solution). After 10 min., the solution was cooled to 5°C and di-t-butyl-dicarbonate (42 g) was added dropwise so as to maintain the reaction temperature below 10°C. The reaction mixture was warmed and stirred 2 hours at room temperature. The reaction mixture was filtered, washed with water and dried to afford N-t-butyloxycarbonyl-N'-t-butylhydrazine (74 g) as a white crystalline solid. m.p. 69-71°C.

Step 2

To a stirred solution of N-t-butyloxycarbonyl-N'-t-butylhydrazine (61 g) in toluene (120 ml) was added benzoyl chloride (45 g) and sodium hydroxide (31 g of a 50% aqueous sodium hydroxide solution) dropwise and simultaneously. After stirring for 1 hour at room temperature, the solid N-t-butyloxycarbonyl-N'-t-butyl-N'-benzoylhydrazine was filtered, washed with water, hexane and dried to afford 52 g of product. m.p. 167-170°C.

Step 3

The N-t-butoxycarbonyl-N'-t-butyl-N'-benzoylhydrazine (52 g, 0.18 mol) was stirred at room temperature in a methanolic hydrochloric acid solution for 4 days. The reaction mixture was neutralized with saturated aqueous sodium bicarbonate. The white precipitate was filtered, washed with water and dried in vacuo to give 30 g of N'-t-butyl-N'-benzoylhydrazine. m.p. 124-125°C.

Step 4

To a stirred mixture of N'-t-butyl-N'-benzoylhydrazine (1.0 g) in 15 ml toluene and aqueous sodium hydroxide (0.5 g of 50% NaOH) was added 3-toluoylchloride (0.9 g). After stirring for 2 hours, the product was isolated by filtration to give N'-t-butyl-N-(3-toluoyl)-N'-benzoylhydrazine in good yield. m.p. 111-114°C.

EXAMPLE NO. 295 -Preparation of N'-(1,1-dimethylethyl)-N,N'-dibenzoylhydrazine

To a gently refluxing solution of ethyl magnesium bromide (150 ml of 1 M solution) was added acetone azine (20 g) dissolved in diethyl ether (80 ml). The solution was refluxed for three days. Upon cooling, a saturated solution of ammonium chloride (75 ml) was added. The aqueous layer was separated and washed twice with diethyl ether (150 ml). The combined ether extracts were dried over anhydrous magnesium sulfate, filtered and the ether removed at reduced pressure. The product was distilled through a vigreux column at 3 torr and collected in a dry ice/acetone cooled receiving flask. The boiling point was 40-50°. 15 g of product was collected.

Oxalic acid (17 g) was dissolved in a solution of ethanol:diethyl ether (1:1) (150 ml) and water (3.3 g) was added. To this acid solution was added the hydrazone (13 g) dissolved in diethyl ether (30 ml). The solution was stirred for 24 hours then filtered. The solid is washed once with diethyl ether. The filtrate was concentrated and combined with the solid to afford a 77% yield (16.3 g) of the hydrazine oxalate.

The 1,1-dimethylethylhydrazine oxalate (2 g) was dissolved in toluene and neutralized with 50% aqueous sodium hydroxide. To this solution was added benzoyl chloride (4.02 g) and sodium hydroxide - (50% Aq. solution) (2.45 g) at 25°C. The reaction mixture was warmed to room temperature and stirred 3 hours. The mixture was diluted with hexane and filtered to afford the product as a white solid (0.5 g).

EXAMPLE NO. 324 -Preparation of N'-t-butyl-N-(thiobenzoyl)-N'-(3-toluoyl)hydrazine

S-(thiobenzoyl)thioglycolic acid (3.0 g) was dissolved in 20 ml pyridine, treated with t-butyl hydrazine hydrochloride (excess, ca. 4 g) and then was heated at ca. 120°C for 14 hours. Water (120 ml) was added and the mixture was extracted with ether. The organic extracts were dried over anhydrous magnesium sulfate, filtered and evaporated to give crude N'-t -butyl-N-(thiobenzoyl)hydrazine as a viscous yellow oil.

N't-butyl-N-(thiobenzoyl)hydrazine (ca. 1 g), m-toluoyl chloride (approx. 0.7 g) and 50% aqueous sodium hydroxide (6 drops) were mixed in 1 ml water and 10 ml toluene at 23°C. After stirring for 3 hours, ether-hexane was added and the product was isolated by filtration (0.25 g). m.p. 165-168°C.

EXAMPLE NO. 625 -Preparation of N'-t -butyl-N-(4-(4,4-dimethyloxazol-2-yl)benzoyl)-N'-(3-toluoyl)hydrazine

1.2 g of N'-t-butyl-N-(4-carbomethoxybenzoyl)-N'-(3-toluoyl)hydrazine was heated in 2 ml of 2-amino-2-methyl-1-propanol at 90-100°C for 5 hours. After cooling, the mixture was diluted with ether/methylene chloride and washed with 0.1 N HCl. The organic layer was evaporated to afford 1.0 g of the corresponding amide.

The amide in 10 ml of chloroform was treated with 0.25 g of thionyl chloride and stirred at 23°C for 1.5 hours. Saturated aqueous sodium bicarbonate was added and the layers separated. Evaporation of the organic layer afforded the product as a foam.

By following substantially the procedures in Examples 1 and 3 and using the reactants shown below in Table II the products of Example Nos. 2, 4 through 12, 14, 19, 20, 32, 37, 55, 98 through 101, 145, 169, 174, 181, 182, 234, 250, 260, 264, 289, 295, 298, 308, 364, 390, 391, 394, 449, 613 and 632 were prepared.

TABLE II

Ex. No.	Compound of Formula II or V	Compound of Formula III	Base	Solvent	m.p.
2	3-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	207-208°C
4	3,4-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	225-227°C
5	4-methylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	222-223°C
6	4-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	237-240°C
7	4-methoxybenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	210-211°C
8	3-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	225-227°C
9	3-methoxybenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	164-166°C
10	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	228-230°C
11	2-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	217-218°C
12	2-methoxybenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	96-97°C
14	4-cyanobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	241-244°C
19	3-methylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	146-148°C
20	2-methylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	194-195°C

Ex. No.	Compound of Formula II or V	Compound of Formula III	Base	Solvent	m.p.
32	4-t-butylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	194-196°C
37	3,5-dichlorobenzoyl-chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
55	1-naphthoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	105-108°C
98	4-fluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	210-214°C
99	3-fluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	130-145°C
100	2-fluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	141-145°C
101	2-naphthoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	246-249°C
145	4-biphenylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
169	2-chloromethyl-benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	144-146°C
174	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	220°C
181	4-ethylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
234	3-methoxy benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	179-180°C
250	benzoyl chloride	2,2-dimethyl-pentylhydrazine oxalic acid salt	sodium hydroxide	toluene and water	low melting solid
260	2-nitro-4-chloro-benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
264	2,6-difluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	210-212°C

Ex. No.	Compound of Formula II or V	Compound of Formula III	Base	Solvent	m.p.
289	4-vinylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	low melting solid
295	benzoyl chloride	2,2-dimethyl-propylhydrazine oxalic acid salt	sodium hydroxide	toluene and water	150°C
298	2-bromobenzoyl chloride	2,2-dimethyl-propylhydrazine oxalic acid salt	sodium hydroxide	toluene and water	172°C
308	4-(1-propenyl)-benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	low melting solid
364	4-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
390	3,5-dimethyl-benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	209-211°C
391	2,4-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	170°C
394	2,3-dimethyl-benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
449	3,4-dimethyl-benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	190°C
613	2-acetoxybenzoyl chloride	t-butylhydrazine hydrochloride	$NaHCO_3$ i.e. sodium bicarbonate	toluene and water	low melting solid
632	2-methyl-3-chloro-benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	

By following substantially the procedures in Example 16 and using the reactants shown below in Table III, the products of Example Nos. 13, 15, 17, 18, 21 through 31, 33 through 36, 38, 40 through 43, 45, 47 through 54, 57 through 62, 64 through 97, 104 through 109, 113, 117, 118, 119, 121, 122, 123, 125, 126, 130 through 135, 137 through 142, 146, 147, 150, 152 through 154, 160, 163, 167, 173, 175, through 180, 182, 183, 184, 190, 194 through 202, 204, through 211, 214 through 220, 224 through 231, 235 through 249, 251 through 259, 261 through 263, 265 through 270, 272 through 284, 287, 288, 290 through 292, 296, 297, 299 through 307, 309 through 322, 325, 327, 328, 334 341 through 343, 346 through 348, 355 through 357, 370, 371, 377, 378, 380 381, 387 through 389, 392, 393, 395, 396, 401 through 413, 419, 420, 422 through 425, 426 through 432, 437 through 448, 450 through 452, 454 through 457, 459 through 469, 474 through 479, 485 through 492, 494 through 528, 531 through 540, 542 through 545, 548 through 597, 599, 601 through 612, 615 through 624, 626 through 631 and 633 were prepared.

TABLE III

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
13	4-toluoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
15	4-toluoyl chloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
17	benzoylchloride	3-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	177-179°C
18	benzoylchloride	2-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	182-184°C
21	benzoylchloride	4-methylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	177-179°C
22	benzoylchloride	3-methylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	198-200°C
23	benzoylchloride	2-methylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	200-202°C
24	benzoylchloride	4-methoxybenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	214-216°C
25	benzoylchloride	3-methoxybenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	178.5-181°C
26	benzoylchloride	2-methoxybenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	175-177°C
27	benzoylchloride	4-t-butylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	185-188°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
28	benzoylchloride	4-cyanobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	185-190°C
29	benzoylchloride	4-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	216-218°C
30	benzoylchloride	3-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	194-198°C
31	benzoylchloride	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	135-137°C
33	4-methylbenzoyl chloride	3,4-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	238-240°C
34	benzoylchloride	4-fluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	202-203°C
35	benzoylchloride	3-fluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	155-158°C
36	benzoylchloride	2-fluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	168-170°C
38	benzoylchloride	2,4-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	82-84°C
40	benzoylchloride	4-trifluoromethyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	216-218°C
41	benzoylchloride	3-trifluoromethyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	186-190°C
42	benzoylchloride	2-trifluoromethyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	163-165°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
43	benzoylchloride	2,5-difluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	147-150°C
45	benzoylchloride	3-cyanobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	138-140°C
47	benzoylchloride	2,6-difluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	179-182°C
48	4-chlorobenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
49	benzoylchloride	3,4-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	211-213°C
50	benzoylchloride	3,5-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
51	benzoylchloride	2,6-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	183-185°C
52	4-t-butylbenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	glassy solid
53	2-chlorobenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	glassy solid
54	1-naphthoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	212-214°C
56	3-chlorobenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	182-183°C
57	4-chlorobenzoyl chloride	3,4-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	261-263°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
58	2-chlorobenzoyl chloride	3,4-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	256-258°C
59	2-methylbenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	182-185°C
60	benzoylchloride	2-chloro-4-nitro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	glassy solid
61	benzoylchloride	3,5-dinitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	223-226°C
62	benzoylchloride	2,3-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	185-188°C
64	benzoylchloride	2-chloro-5-methyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	212-214°C
65	benzoylchloride	3,5-dimethylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	194-197°C
66	benzoylchloride	2-nitro-5-methyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	190-195°C
67	benzoylchloride	2-methyl-3-chloro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	207-209°C
68	benzoylchloride	3-chloro-4-methyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	glassy solid
69	benzoylchloride	2-nitro-3-chloro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	80-83°C
70	benzoylchloride	3-methoxy-4-nitro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	205-207°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
71	benzoylchloride	2-nitro-3-methoxy benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	158-159°C
72	benzoylchloride	2,4-dinitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
73	4-chlorobenzoyl chloride	2-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	190-192°C
74	4-chlorobenzoyl chloride	3-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	195-197°
75	4-chlorobenzoyl chloride	4-methylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	204-205.5°C
76	4-chlorobenzoyl chloride	3,5-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	215-219°C
77	4-chlorobenzoyl chloride	2,4-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	185-188°C
78	4-chlorobenzoyl chloride	4-trifluoromethyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	257-259°C
79	benzoylchloride	4-methanesulfonyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	180-183°C
80	benzoylchloride	4-isopropylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	220-224°C
81	benzoylchloride	2-acetoxybenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	154-156°C
82	benzoylchloride	4-ethylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	glassy solid

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
83	benzoylchloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	85-90°C
84	benzoylchloride	4-hydroxybenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	229-233°C
85	4-methylbenzoyl chloride	2-methylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	207-208°C
86	4-methylbenzoyl chloride	3-methylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	173-174°C
87	4-methylbenzoyl chloride	2,4-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	147-148°C
88	4-methylbenzoyl chloride	3,5-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	228-230°C
89	4-methylbenzoyl chloride	2-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	206-207°C
90	4-methylbenzoyl chloride	4-fluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	173-174°C
91	4-methylbenzoyl chloride	4-trifluoromethyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	147-148°C
92	4-methylbenzoyl chloride	3-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	158-161°C
93	4-chlorobenzoyl chloride	3-chloromethyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	203-204°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
94	4-chlorobenzoyl chloride	4-chloromethyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	216-217°C
95	4-chlorobenzoyl chloride	2-methylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	190-195°C
96	4-chlorobenzoyl chloride	3-methoxybenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	170-172°C
97	4-chlorobenzoyl chloride	3-methylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	186-188°C
104	benzoylchloride	4-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	216-219°C
105	benzoylchloride	3-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	207-210°C
106	benzoylchloride	4-n-butylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	glassy solid
107	4-ethylbenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	197-200°C
108	3,4-dichloro-benzoylchloride	benzoylchloride chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	119-130°C
109	benzoylchloride	4-acetylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
113	benzoylchloride	2-iodobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	80-82°C
117	benzoylchloride	4-phenoxybenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	240-250°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
118	4-trifluoromethyl-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	173-175°C
119	4-trifluoromethyl-benzoylchloride	3,4-dichlorobenoyl-chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	223-227°C
121	benzoylchloride	2-chloro-4-bromo-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	glassy solid
122	benzoylchloride	4-phenylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	low melting solid
123	benzoylchloride	3,4,5-trimethoxy-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	175-177°C
125	benzoylchloride	3-thiocyanomethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	low melting solid
126	benzoylchloride	3-cyanomethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	160-162°C
130	4-ethylbenzoyl chloride	3-toluoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	low melting solid
131	4-ethylbenzoyl chloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	196-197°C
132	4-ethylbenzoyl chloride	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	low melting solid

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
133	benzoylchloride	3-ethylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	141-144°C
134	4-ethylbenzoyl chloride	3-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	171-174°C
135	4-ethylbenzoyl chloride	2-iodobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	glassy solid
137	benzoylchloride	4-carbomethoxy benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	169-180°C
138	2-bromobenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	207°C
139	2-trifluoromethyl-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	212-214°C
140	benzoylchloride	3-iodobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
141	benzoylchloride	2-ethylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	oil
142	benzoylchloride	3-methoxymethyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	oil
146	benzoylchloride	2-nitro-4-(2-chloro-4-trifluoro-methyl phenoxy) benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	50-55°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	M.p.
147	2-nitro-4-(2-chloro-4-trifluoromethyl phenoxy) benzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	255-258°C
150	benzoylchloride	4-methylthio-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>265°C
152	benzoylchloride	3-bromo-4-methyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	220-223°C
153	benzoylchloride	3-methyl-4-bromo benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	225-227°C
154	benzoylchloride	2,4-dibromo benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	223-225°C
160	benzoylchloride	3-phenoxy benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	201-203°C
163	benzoylchloride	4-formyl benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	158-161°C
167	benzoylchloride	2-acetoxybenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
173	2-methyl-5-trifluoromethyl benzoylchloride	2-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	175°C
175	4-ethylbenzoyl chloride	3-ethyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	oil
176	benzoylchloride	4-n-propyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	145-146°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
177	4-toluoyl chloride	3-bromo benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	151-153°C
178	4-toluoyl chloride	3,5-dimethyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	225-227.5°C
179	benzoylchloride	4-iodobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	223-225°C
180	4-toluoyl chloride	4-ethyl benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	180-182°C
182	4-toluoyl chloride	3-ethyl benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	183-185°C
183	benzoylchloride	2-isopropylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	low melting solid
184	3-ethyl benzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	oil
190	3-ethyl benzoyl chloride	2,4-chloro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	179-181°C
194	4-methoxybenzoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	foam
195	4-methoxybenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	foam
196	2-chlorobenzoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	glassy solid

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
197	2-chlorobenzoyl chloride	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	glass
198	2-chlorobenzoyl chloride	4-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	203-206°C
199	2-chlorobenzoyl chloride	4-ethyl benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	171-174°C
200	4-ethyl benzoyl chloride	3,5-dimethyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	181°C
201	4-ethyl benzoyl chloride	2-chloro-4-methyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	oily solid
202	benzoylchloride	3-acetoxybenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
204	4-ethyl benzoyl chloride	2-nitro-3-methyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	85-90°C
205	4-methoxybenzoyl chloride	3,5-dimethyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
206	4-methoxybenzoyl chloride	2,4-dichloro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
207	2-chlorobenzoyl chloride	2,6-dichloro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
208	2-chlorobenzoyl chloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	213-216°C
209	2-chlorobenzoyl chloride	2,5-difluoro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	190-192°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
210	2-chlorobenzoyl chloride	4-methoxy benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	190-192°C
211	2-chlorobenzoyl chloride	2-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	209-211°C
214	2-chlorobenzoyl chloride	2,4-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	204-206°C
215	2-chlorobenzoyl chloride	3-methoxy benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	170-172°C
216	2-chlorobenzoyl chloride	3-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	212-214°C
217	2-chlorobenzoyl chloride	2-trifluoromethyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	161-162°C
218	2-chlorobenzoyl chloride	3-trifluoromethyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	189-190°C
219	2-chlorobenzoyl chloride	4-trifluoromethyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	246-247°C
220	3-toluoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
224	2-chlorobenzoyl chloride	4-cyanobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	220-222°C
225	2-chlorobenzoyl chloride	4-fluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
226	2-chlorobenzoyl chloride	4-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	228-230°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
227	2-chlorobenzoyl chloride	4-chloro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	244-246°C
228	2-chlorobenzoyl chloride	2-methoxy benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	199-200°C
229	2-chlorobenzoyl chloride	4-nitro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	251-253°C
230	2-chlorobenzoyl chloride	2-fluoro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	178-180°C
231	2-chlorobenzoyl chloride	2,6-difluoro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	213-214°C
235	3-methoxybenzoyl chloride	2,5-difluoro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	146-148°C
236	3-methoxybenzoyl chloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	178-179°C
237	3-methoxybenzoyl chloride	3,4-dichloro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	213-216°C
238	3-methoxybenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	168-170°C
239	3-methoxybenzoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	158-160°C
240	3-methoxybenzoyl chloride	3,4-dichloro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
241	3-methoxybenzoyl chloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	182-184°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
242	3-methoxybenzoyl chloride	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	152-154°C
243	benzoylchloride	4-trifluoromethoxy benzoylchloride	t-butylhydrazine hydrochloride	pyridine	pyridine	189-190°C
244	4-trifluoromethoxy benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	180-182°C
245	4-trifluoromethoxy benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	154-156°C
246	4-trifluoromethoxy benzoylchloride	4-chloro benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	Solid
247	4-trifluoromethoxy benzoylchloride	3,4-dichloro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
248	4-trifluoromethoxy benzoylchloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	196-200°C
249	4-trifluoromethoxy benzoylchloride.	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
251	4-ethoxybenzoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
252	4-ethoxybenzoyl chloride	3,5-dimethyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	oil
253	4-ethoxybenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
254	4-ethoxybenzoyl chloride	2-nitro-4-chloro benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
255	3-chloro-4-methoxy-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	158-160°C
256	4-methylthio benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	98-101°C
257	4-n-butyloxy benzoylchloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
258	2-methylthio-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	235°C
259	2-nitro-4-chloro-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	240°C
261	2-nitro-4-chloro-benzoylchloride	4-t-butylbenzoyl chloride	t-butylhydrazine hydrochloride	triethyl-amine	methylene chloride	
262	2-nitro-4-chloro-benzoylchloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	250°C
263	4-toluoyl chloride	2-chloro-5-methyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	177-181°C
265	4-phenoxybenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
266	4-phenoxybenzoyl chloride	4-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
267	4-n-butylbenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	oily solid
268	4-n-butylbenzoyl chloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
269	4-isopropylbenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
270	4-isopropylbenzoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
272	4-cyanobenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
273	4-cyanobenzoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	228-232°C
274	2-methyl-4-chloro-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	227-230°C
275	4-ethylbenzoyl chloride	4-trifluoromethoxy benzoylchloride	t-butylhydrazine hydrochloride	pyridine	pyridine	198-200°C
276	benzoylchloride	2,3,4,5,6-penta-fluoro benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	180-182°C
277	2,3,4,5,6-penta-fluoro benzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	141-142°C
278	4-cyanobenzoyl chloride	3,4-dichlorobenzoyl	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	211-213°C
279	2-methyl-4-chloro-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	212-215°C
280	4-trifluoromethyl benzoylchloride	3,5-dimethylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
281	2-methyl-4-chloro-benzoylchloride	3,5-dimethylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
282	benzoylchloride	3-vinylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
283	4-ethylbenzoyl chloride	3-vinylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
284	4-trifluoromethyl-benzoylchloride	3-vinylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
287	4-n-propylbenzoyl chloride	3,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	171-174°C
288	4-n-propylbenzoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
290	4-vinylbenzoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	low melting solid
291	2,6-difluoro-benzoylchloride	3,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	240-241°C
292	2,6-difluoro-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	172-174°C
296	4-chlorobenzoyl chloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	165-166°C
297	4-toluoyl chloride	3-toluoyl chloride	2,2-dimethyl-propylhydrazine oxalic acid salt	sodium hydroxide	toluene and water	154°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
299	4-chlorobenzoyl chloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	218-220°C
300	3-methoxybenzoyl chloride	3,5-dimethylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
301	4-chlorobenzoyl chloride	4-fluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
302	4-n-propylbenzoyl chloride	3,5-dimethylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	oily solid
303	4-vinylbenzoyl chloride	3,5-dimethylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	185-187°C
304	4-acetoxybenzoyl chloride	3,5-dimethylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium bicarb-onate	toluene and water	73-75°C
305	3,5-dimethyl-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	84-86°C
306	3,5-dimethyl-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	Oil
307	3,5-dimethyl-benzoylchloride	4-ethylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	168-170°C
309	4-isopropyl-benzoylchloride	3,5-dimethyl benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	Oily Solid
310	4-ethylbenzoyl chloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	179°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
311	3-chloro-4-methyl-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	172-174°C
312	3-chloro-4-methyl-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	210-214°C
313	3-chloro-4-methyl-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	205-208°C
314	3-chloro-4-methyl-benzoylchloride	3,4-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	155-157°C
315	4-ethylbenzoyl chloride	2-nitrobenzoyl chloride	2,2-dimethyl-propylhydrazine oxalic acid salt	sodium hydroxide	toluene and water	145°C
316	2,6-difluoro-benzoylchloride	2-chlorobenzoyl chloride	t-butylhydrazine hydrochloride			255-257°C
317	2,6-difluoro-benzoylchloride	3-chlorobenzoyl chloride	t-butylhydrazine hydrochloride			191-192°C
318	2,6-difluoro-benzoylchloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride			233-235°C
319	2,6-difluoro-benzoylchloride	3,5-dimethylbenzoyl chloride	t-butylhydrazine hydrochloride			214-215°C
320	4-ethylbenzoyl chloride	3,5-dimethylbenzoyl chloride	2,2-dimethyl-propylhydrazine oxalic acid salt	sodium hydroxide	toluene and water	160°C
321	3-trifluoromethyl-benzoylchloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride			183-185°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
322	3-trifluoromethyl-benzoylchloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>225°C
325	2-nitro-3-methoxy-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	125-128°C
327	4-chlorobenzoyl chloride	4-carboxymethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
328	4-ethylbenzoyl chloride	4-carboxymethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
334	4-ethylbenzoyl chloride	3,5-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	low melting solid
341	4-chlorobenzoyl chloride	2-fluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
342	4-ethylbenzoyl chloride	3,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>210°C
343	4-ethylbenzoyl chloride	2-fluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>210°C
346	4-carboxymethyl-benzoylchloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium bicar-bonate	toluene and water	255-257°C
347	4-carboxymethyl-benzoylchloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium bicar-bonate	toluene and water	>270°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
348	4-carboxymethyl-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium bicar-bonate	toluene and water	>270°C
355	3-phenoxybenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	126-130°C
356	3-phenoxybenzoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	118-122°C
357	4-acetylbenzoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	154-156°C
370	4-biphenylbenzoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
371	3-cyanobenzoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	195-198°C
377	3-chloromethyl-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	100-102°C
378	4-ethylbenzoyl chloride	2,3-dimethylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	185-186°C
380	benzoylchloride	2,3-dimethylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
381	4-toluoyl chloride	2,3-dimethylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
387	benzoylchloride	1-naphthoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	236-239°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
388	1-naphthoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	201-205°C
389	4-isothiocyanato-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	150-153°C
392	2-fluorobenzoyl chloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochlorider	sodium hydroxide	toluene and water	184-186°C
393	2-fluorobenzoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	158-160°C
395	2-fluorobenzoyl chloride	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	192°C
396	2-fluorobenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
401	4-bromobenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
402	2,3-dichloro-benzoylchloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
403	2,3-dichloro-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
404	2-fluorobenzoyl chloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
405	2,3-dichloro-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
406	benzoylchloride	2-naphthoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	215-222°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
407	2-naphthoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
408	benzoylchloride	3-trifluoromethoxy-benzoylchloride	t-butylhydrazine hydrochloride	pyridine	pyridine	140-144°C
409	4-isothiocyanato-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
410	2,6-difluoro-benzoylchloride	2,4-difluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
411	2,6-difluoro-benzoylchloride	3,5-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	245-249°C
412	4-toluoyl chloride	3,5-bis-(trifluoro-methyl)benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	208°C
413	benzoylchloride	3,5-bis-(trifluoro-methyl)benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	230-231°C
419	benzoylchloride	3-chloro-4-fluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	210-211°C
420	4-chlorobenzoyl chloride	3-chloro-4-fluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	204-205°C
422	4-chlorobenzoyl chloride	3,5-bis-(trifluoro-methyl)benzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
423	2,3-dimethyl-benzoylchloride	3,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	208-209°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
424	4-toluoyl chloride	3-chloro-2-methyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	208-212°C
426	2,6-dimethyl-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	203-204°C
427	2,6-dimethyl-benzoylchloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	217-218°C
428	2,3-dimethyl-benzoylchloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	197-198°C
429	2,3-dimethyl-benzoylchloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	182-183°C
430	2,3-dimethyl-benzoylchloride	3-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	211-212°C
431	3-trifluoro-methoxybenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
432	3-trifluoro-methoxybenzoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	148-150°C
433	2,3-dimethyl-benzoylchloride	2-methyl-3-chloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
437	2,6-difluoro-benzoylchloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	271-275°C
438	2-methyl-3-chloro-benzoylchloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
439	2-methyl-3-chloro-benzoylchloride	3-chloro-4-fluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	240-241°C
440	2,3-dimethyl-benzoylchloride	3-chloro-4-fluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	187°C
441	4-ethylbenzoyl chloride	3-chloro-4-fluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	154-157°C
442	3,4-dimethyl-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	213-215°C
443	3,4-dimethyl-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	176-177°C
444	3,4-dimethyl-benzoylchloride	2-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	190°C
445	3,4-dimethyl-benzoylchloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	123-125°C
446	3,4-dimethyl-benzoylchloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	185°C
447	3,4-dimethyl-benzoylchloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	190°C
448	3,4-dimethyl-benzoylchloride	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	165°C
450	benzoylchloride	3,4-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	198-200°C
451	4-ethylbenzoyl chloride	3,4-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	228-230°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
452	2-fluoro-6-chloro-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>230°C
454	4-chloromethyl benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
455	2,3-dimethoxy-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
456	2,3-dimethoxy-benzoylchloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	180°C decom-poses
457	2,3-dimethoxy-benzoylchloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	130-131°C
459	4-t-butylbenzoyl chloride	3,4-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	202-203°C
460	4-t-butylbenzoyl chloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	228°C
461	4-t-butylbenzoyl chloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	238°C
462	4-t-butylbenzoyl chloride	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium bicar-bonate	toluene and water	192-193°C
463	4-t-butylbenzoyl chloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	220°C
464	4-t-butylbenzoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	185-187°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
465	4-t-butylbenzoyl chloride	2-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	220°C
466	4-t-butylbenzoyl chloride	3,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	300°C
467	3,4-dimethyl-benzoylchloride	3,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	207-208°C
468	3,4-dimethyl-benzoylchloride	4-fluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	225°C
469	4-t-butylbenzoyl chloride	4-fluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>300°C
474	1-naphthoyl chloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	240-241°C
475	1-naphthoyl chloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	195-198°C
476	2-methyl-3-nitro-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	216-217°C
477	2-methyl-3-nitro-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
478	2-methyl-3-nitro-benzoylchloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	244-246°C
479	2-methyl-3-nitro-benzoylchloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	235°C dec.
480	3-bromo-2-methyl-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
465	4-t-butylbenzoyl chloride	2-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	220°C
466	4-t-butylbenzoyl chloride	3,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	300°C
467	3,4-dimethyl-benzoylchloride	3,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	207-208°C
468	3,4-dimethyl-benzoylchloride	4-fluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	225°C
469	4-t-butylbenzoyl chloride	4-fluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>300°C
474	1-naphthoyl chloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	240-241°C
475	1-naphthoyl chloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	195-198°C
476	2-methyl-3-nitro-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	216-217°C
477	2-methyl-3-nitro-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
478	2-methyl-3-nitro-benzoylchloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	244-246°C
479	2-methyl-3-nitro-benzoylchloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	235°C dec.
480	3-bromo-2-methyl-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
481	3-bromo-2-methyl-benzoylchloride	3-toluoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
482	3-bromo-2-methyl-benzoylchloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
483	3-bromo-2-methyl-benzoylchloride	2,4-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
485	2-toluoyl chloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	192-193°C
486	2-toluoyl chloride	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium bicar-bonate	toluene and water	>200°C
487	2-toluoyl chloride	3-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	232-235°C
488	2-toluoyl chloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	241-242°C
489	2-toluoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	204-208°C
490	2-toluoyl chloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	190°C
491	2-toluoyl chloride	3,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	276-277°C
492	2-toluoyl chloride	3,5-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	215-216°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
493	2-methyl-3-fluoro-chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
494	2-methyl-3-fluoro-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
495	2-fluoro-6-chloro-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluened and water	>240°
496	2-fluoro-6-chloro-benzoylchloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
497	2-fluoro-6-chloro-benzoylchloride	4-fluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
498	4-(2-chloroethyl)-benzoylchloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	Oil
499	2,4,6-trifluoro-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	247-250°C
500	2,4,6-trifluoro-benzoylchloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	196-197°C
501	2,4,6-trifluoro-benzoylchloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	228-231°C
502	2,4,6-trifluoro-benzoylchloride	3,5-dimethyl - benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	245 dec.
503	2-nitro-3-chloro-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	196-197°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
504	2-nitro-3-chloro-benzoylchloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	214-215°C
505	2-nitro-3-chloro-benzoylchloride	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	200-201°C
506	2-nitro-3-chloro-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	213°C
507	2-nitro-3-chloro-benzoylchloride	3-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	222°
508	2-nitro-3-chloro-benzoylchloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	206-207°C
509	2-nitro-3-chloro-benzoylchloride	3,5-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	136-138°C
510	2-nitro-3-chloro-benzoylchloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	232°C
511	4-ethylbenzoyl chloride	2,3-difluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	100°C
512	4-ethylbenzoyl chloride	2,3-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	164°C
513	2,3-difluoro-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	180°C
514	2,3-dichloro-benzoylchloride	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	210°C
515	benzoylchloride	2,3-difluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	52-53°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
516	2,3-dichloro-benzoylchloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	205°C
517	2,3-dichloro-benzoylchloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	240°C
518	2,3-dichloro-benzoylchloride	3,5-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	180°C
519	2,3-dichloro-benzoylchloride	3-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	238°C
520	2,3-dichloro-benzoylchloride	2,3-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	201°C
521	2,3-difluoro-benzoylchloride	2-bromobenzoyl	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	192°C
522	2,3-dimethyl-benzoylchloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>220°C
523	2,3-dimethyl-benzoylchloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	173°C
524	2,3-dimethyl-benzoylchloride	2,6-difluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	212-213°C
525	2,3-dimethyl-benzoylchloride	2,4-difluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	186-187°C
526	2,3-dimethyl-benzoylchloride	3-methoxybenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	189-190°C
527	2,3-dimethyl-benzoylchloride	2-methoxybenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	150-151°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
528	2,3-dimethyl-benzoylchloride	2-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	173-175°C
529	2,3-dimethyl-benzoylchloride	4-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
530	2-methyl-3-chloro-benzoylchloride	2,4-dichlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
531	4-(2-chloro-ethyl)benzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	148-150°C
532	4-(2-chloro-ethyl)benzoyl chloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
533	3-fluoro-4-methyl-benzoylchloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	174-177°C
534	3-fluoro-4-methyl-benzoylchloride	3,5-difluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	178-180°C
535	3-fluoro-4-methyl-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	155-158°C
536	3-fluoro-4-methyl-benzoylchloride	3,5-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
537	3-fluoro-4-methyl-benzoylchloride	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	140-142°C
538	3-fluoro-4-methyl-benzoylchloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	Oil

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
539	4-ethylbenzoyl chloride	3,5-difluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
540	2,3-dimethyl-benzoylchloride	2-iodobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	Sol.
542	2,6-difluoro-3-methylbenzoyl chloride	Benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	Sol.
543	2,6-difluoro-3-methylbenzoyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
544	2,6-difluoro-3-methylbenzoyl chloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
545	4-chlorobenzoyl chloride	2,3-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	220-221°C
548	2-fluoro-6-chloro-benzoylchloride	2,3-difluorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	186-187°C
549	2,3-difluoro-benzoylchloride	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	185-187°C
550	2,3-difluoro-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	185-186°C
551	2,3-difluoro-benzoylchloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	181-182°C
552	2,3-difluoro-benzoylchloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	186°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
553	2,3-dimethyl-benzoylchloride	2,3-difluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	190°C
554	2,3-dimethyl-benzoylchloride	2,3-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	164-165°C
555	2,3-dimethyl-benzoylchloride	3,4-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	190-191°C
556	2,3-dimethyl-benzoylchloride	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	183-184°C
557	4-ethylbenzoyl chloride	2-methyl-5-chloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	180°C
558	2,3-dimethyl-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	210-212°C
559	benzoylchloride	2-methyl-5-chloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	250°C
560	2,6-difluoro-benzoylchloride	2-methyl-5-chloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	200°C
561	2,3-dimethyl-benzoylchloride	2-methyl-5-chloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	184°C
562	2-methyl-3-chloro-benzoylchloride	2-methyl-5-chloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	213°C
563	2,6-difluoro-benzoylchloride	2-chloro-5-methyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	184°C
564	2,3-dimethyl-benzoylchloride	2-chloro-5-methyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	174°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
565	2-methyl-3-chloro-benzoylchloride	2-chloro-5-methyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	184°C
566	4-chlorobenzoyl chloride	2-methyl-5-chloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	217°C
567	4-chlorobenzoyl chloride	2-chloro-5-methyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	205°C
568	2-fluoro-4-chloro-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	200°C
569	2-fluoro-4-chloro-benzoylchloride	3-toluoyl	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	195°C
570	2-fluoro-4-chloro-benzoylchloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	300°C
571	2-fluoro-4-chloro-benzoylchloride	3,5-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	170°C
572	2-fluoro-4-chloro-benzoylchloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	185°C
573	2-fluoro-4-chloro-benzoylchloride	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	165°C
574	2-chloro-3-methyl-benzoylchloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	200-205°C
575	2-chloro-3-methyl-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	190-193°C
576	2-chloro-3-methyl-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium	toluene	>250°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
577	2-chloro-3-methyl-benzoylchloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	202-206°C
578	2-chloro-3-methyl-benzoylchloride	3,5-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	190-193°C
579	2-bromo-3-methyl-benzoylchloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	210-212°C
580	2-bromo-3-methyl-benzoylchloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
581	2-bromo-3-methyl-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
582	2-bromo-3-methyl-benzoylchloride	3,5-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
583	2-bromo-3-methyl-benzoylchloride	2-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
584	2,3-dimethyl-benzoylchloride	2-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	208°C
585	2,3-dimethyl-benzoylchloride	2-trifluoromethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
586	2,3-dimethyl-benzoylchloride	4-ethylbenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	190°C
587	2,3-dimethyl-benzoylchloride	3,5-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	148-149°C
588	2,6-difluoro-benzoylchloride	3-chloro-4-fluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	230°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
589	4-chlorobenzoyl chloride	3,5-difluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	175°C
590	2,3-dimethyl-benzoylchloride	3,5-difluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	200°C
591	2-methyl-3-chloro-benzoylchloride	3,5-difluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	220°C
592	benzoylchloride	3,5-difluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	201°C
593	4-ethylbenzoyl chloride	2,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	146-147°C
594	2,6-difluoro-benzoylchloride	3,5-difluoro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	224-225°C
595	2-methyl-3-chloro-benzoylchloride	3,5-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	218-219°C
596	2,3-dimethyl-benzoylchloride	2,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	180-183°C
597	2-bromobenzoyl chloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	235°C
598	2-bromo-3-methyl-benzoylchloride	3-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
599	2-chloro-3-methyl-benzoylchloride	3-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	205-206°C
600	2-chloro-3-methyl-benzoylchloride	3-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
601	2-chloro-3-methyl-benzoylchloride	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	212°C
602	2,3-dimethyl-benzoylchloride	2-nitro-3-methyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	low melting solid
603	2,3-dimethyl-benzoylchloride	2-nitro-5-methyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
604	2,6-difluoro-benzoylchloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>230°C
605	2,6-dimethyl-benzoylchloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	217-219°C
606	2,4,6-trimethyl-benzoylchloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	221-223°C
607	2,4,6-trimethyl-benzoylchloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	175-177°C
608	2,6-difluoro-benzoylchloride	4-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	183-185°C
609	2,6-difluoro-benzoylchloride	2,5-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	236-238°C
610	2,4,6-trimethyl-benzoylchloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>240°C
611	2,4,6-trimethyl-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	181-183°C

Example No.	Compound of Formula II	Compound of Formula V	Compound of Formula III	Base	Solvents	m.p.
612	2,4,6-trimethyl-benzoylchloride	3,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	234-235°C
615	2,4-dimethyl-benzoylchloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	188-189°C
616	2,4-dimethyl-benzoylchloride	2,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	163-165°C
617	2,4-dimethyl-benzoylchloride	3,5-dimethyl-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	138-140°C
618	2,4-dimethyl-benzoylchloride	3,5-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	175-178°C
619	2,4-dimethyl-benzoylchloride	3-bromobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	218-220°C
620	2,4-dimethyl-benzoylchloride	3,4-dichloro-benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	>250°C
621	2-bromo-3-methyl-benzoylchloride	2-nitrobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
622	piperonyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
623	piperonyl chloride	4-chlorobenzoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
624	piperonyl chloride	3-toluoyl chloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	
626	2-pyrrolobenzoyl chloride	benzoylchloride	t-butylhydrazine hydrochloride	sodium hydroxide	toluene and water	

By following substantially the procedures in Example 44 and using the reactants shown below in Table IV, the products of Example Nos. 39, 46, 63, 110, 111, 112, 114, 115, 116, 120, 124, 127, 128, 129, 136, 143, 155 through 158, 185 through 189, 332, 336 through 340, 382, 383, 384, 399, 400, 414 through 418, 421, 434, 435, 436, 470, 471, 472, 546 and 547 were prepared.

TABLE IV

Ex. No.	m.p.	Reactants	
39	163-164°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Dimethyl ketone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of acetone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX (IV):	2-isopropyl-1-benzoylhydrazine
		Compound of Formula V:	Benzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
46	glassy solid	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Methylethyl ketone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of 2-butanone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX (IV):	2-sec-butyl-1-benzoylhydrazine
		Compound of Formula V:	Benzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
63	239-242°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Methyl-t-butyl ketone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of methyl-t-butylketone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX (IV):	2-(1,2,2-trimethylpropyl)-1-benzoylhydrazine
		Compound of Formula V:	Benzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
110	low melting solid	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	1,1,1-trimethylacetaldehyde
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of 1,1,1-trimethylacetaldehyde
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX (IV):	2-neopentyl-1-benzoylhydrazine
		Compound of Formula V:	2-bromobenzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
114	161-163°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Isobutyraldehyde
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of isobutyraldehyde
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic Acid
		Compound of Formula IX (IV):	2-isobutyl-1-benzoylhydrazine
		Compound of Formula V:	Benzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
115	glassy solid	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Acetone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of acetone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX (IV):	2-isopropyl-1-benzoylhydrazine
		Compound of Formula V:	2-bromobenzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
116	175-178°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Acetone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of acetone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX (IV):	2-isopropyl-1-benzoylhydrazine
		Compound of Formula V:	3,4-dichlorobenzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
120	>250°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Dicyclopropylketone
		Solvent:	Methanol
		Catalyst:	Acetic Acid
		Compound of Formula VIII:	Benzoylhydrazone of dicyclopropylketone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX (IV):	2-dicyclopropylmethyl-1-benzoylhydrazine
		Compound of Formula V:	Benzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
124	glassy solid	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Methyl-t-butyl ketone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of methyl-t-butylketone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX (IV):	2-(1,2,2-trimethylpropyl)-1-benzoylhydrazine
		Compound of Formula V:	2-nitrobenzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
127	239-242°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Methyl-t-butyl ketone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of methyl-t-butylketone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX (IV):	2-(1,2,2-trimethylpropyl)-1-benzoylhydrazine
		Compound of Formula V:	Benzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
128	175-177°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Diisopropyl ketone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of diisopropyl-ketone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX (IV):	2-diisopropylmethyl-1-benzoyl hydrazine
		Compound of Formula V:	Benzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
129	>250°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Cyclopropylmethyl ketone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of cyclopropyl-methylketone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX (IV):	2-(1-cyclopropylethyl)-1-benzoylhydrazine
		Compound of Formula V:	Benzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
136	154-155.5°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Methyl-t-butylketone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of methyl-t-butylketone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX (IV):	2-(1-methyl)neopentyl-1-benzoylhydrazine
		Compound of Formula V:	2-bromobenzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
143	155°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Methyl cyclohexyl ketone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of methyl cyclohexyl ketone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-benzoyl-2-(1-cyclohexyl-ethyl)hydrazine
		Compound of Formula V:	benzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
155	165°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Acetone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of acetone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-benzoyl-2-isopropyl hydrazine
		Compound of Formula V:	2,6-dichlorobenzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
156	Low melting solid	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Trimethylacetaldehyde
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of trimethyl acetaldehyde
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-benzoyl-2-(2,2-dimethylpropyl) hydrazine
		Compound of Formula V:	3,4-dichlorobenzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
157	246-249°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Pinacolone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of pinacolone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-benzoyl-2-(1,2,2-trimethylpropyl)hydrazine
		Compound of Formula V:	4-cyanobenzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
158	212-214°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Trimethylacetaldehyde
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of trimethyl acetaldehyde
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-benzoyl-2-(2,2-dimethylpropyl) hydrazine
		Compound of Formula V:	4-ethylbenzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
185	>250°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Pinacolone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of pinacolone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-benzoyl-2-(1,2,2-trimethyl-propyl)hydrazine
		Compound of Formula V:	3-nitrobenzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
186	>250°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Trimethylacetaldehyde
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of trimethyl acetaldehyde
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-benzoyl-2-(2,2-dimethylpropyl) hydrazine
		Compound of Formula V:	3-nitrobenzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
187	187-190°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Trimethylacetaldehyde
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of trimethyl acetaldehyde
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-benzoyl-2-(2,2-dimethylpropyl) hydrazine
		Compound of Formula V:	3-toluoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
188	245-250°C	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Trimethylacetaldehyde
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of trimethyl acetaldehyde
		Reducing Agent:	Sodium cyanoborchydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-benzoyl-2-(2,2-dimethylpropyl) hydrazine
		Compound of Formula V:	4-chlorobenzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
189	Glass	Compound of Formula VI:	Benzoylhydrazine
		Compound of Formula VII:	Trimethylacetaldehyde
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	Benzoylhydrazone of trimethyl acetaldehyde
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-benzoyl-2-(2,2-dimethylpropyl) hydrazine
		Compound of Formula V:	2,4-dinitrobenzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
332	149°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	Pinacolone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoyl hydrazone of pinacolone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(1,2,2-trimethylpropyl)hydrazine
		Compound of Formula V:	2-nitrobenzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
336	127°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	Pinacolone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoyl hydrazone of pinacolone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(1,2,2-trimethylpropyl)hydrazine
		Compound of Formula V:	3,5-dimethylbenzoylchloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
337	90°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	Pinacolone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoyl hydrazone of pinacolone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(1,2,2-trimethylpropyl)hydrazine
		Compound of Formula V:	2-nitro-3-methyl benzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
338	158°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	Pinacolone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoyl hydrazone of pinacolone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(1,2,2-trimethylpropyl)hydrazine
		Compound of Formula V:	2-nitro-5-methylbenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
339	180°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	Pinacolone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoyl hydrazone of pinacolone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(1,2,2-trimethylpropyl)hydrazine
		Compound of Formula V:	3-toluoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
340	180°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	Pinacolone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoyl hydrazone of pinacolone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(1,2,2-trimethylpropyl)hydrazine
		Compound of Formula V:	2-iodobenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
382	150°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	Pinacolone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoyl hydrazone of pinacolone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(1,2,2-trimethylpropyl)hydrazine
		Compound of Formula V:	2-toluoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
383	165°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	Pinacolone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoyl hydrazone of pinacolone
		Reducing Agent:	Sodium cyanoborchydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(1,2,2-trimethylpropyl)hydrazine
		Compound of Formula V:	2-trifluoromethylbenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
384	151°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	Pinacolone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoyl hydrazone of pinacolone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(1,2,2-trimethylpropyl)hydrazine
		Compound of Formula V:	benzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
399	166°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	4,4-dimethyl-2-pentanone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoyl hydrazone of 3,4-dimethyl-2-pentanone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(4,4-dimethyl-2-pentyl)hydrazine
		Compound of Formula V:	3,5-dimethylbenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
400	170°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	4,4-dimethyl-2-pentanone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoyl hydrazone of 4,4-dimethyl-2-pentanone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(4,4-dimethyl-2-pentyl)hydrazine
		Compound of Formula V:	3,4-dichlorobenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
414	145°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	3-methyl-3-ethyl-2-pentanone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoyl hydrazone of 3-methyl-3-ethyl-2-pentanone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(3-methyl-3-ethylpent-2-yl)hydrazine
		Compound of Formula V:	benzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
415	130°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	3-methyl-3-ethyl-2-pentanone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoyl hydrazone of 3-methyl-3-ethyl-2-pentanone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(3-methyl-3-ethylpent-2-yl)hydrazine
		Compound of Formula V:	3,5-dimethylbenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
416	148°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	3-methyl-3-ethyl-2-pentanone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoyl hydrazone of 3-methyl-3-ethyl-2-pentanone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(3-methyl-3-ethylpent-2-yl)hydrazine
		Compound of Formula V:	2-nitrobenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
417	171°C	Compound of Formula VI:	4-ethylbenzoyl hydrazine
		Compound of Formula VII:	Pinacolone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-ethylbenzoyl hydrazone of pinacolone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-ethylbenzoyl)-2-(1,2,2-trimethylpropyl)hydrazine
		Compound of Formula V:	3,5-dimethylbenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
418	Glass	Compound of Formula VI:	4-ethylbenzoyl hydrazine
		Compound of Formula VII:	Pinacolone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-ethylbenzoyl hydrazone of pinacolone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-ethylbenzoyl)-2-(1,2,2-trimethylpropyl)hydrazine
		Compound of Formula V:	2-nitro-5-methylbenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
421	Oil	Compound of Formula VI:	4-ethylbenzoyl hydrazine
		Compound of Formula VII:	Acetone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-ethylbenzoyl hydrazone of acetone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-ethylbenzoyl)-2-isopropyl hydrazine
		Compound of Formula V:	3,5-dimethylbenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
434	125°C	Compound of Formula VI:	4-ethylbenzoyl hydrazine
		Compound of Formula VII:	Pinacolone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-ethylbenzoyl hydrazone of pinacolone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-ethylbenzoyl)-2-(1,2,2-trimethylpropyl)hydrazine
		Compound of Formula V:	2,4-dichlorobenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
435	110°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	3-methyl-3-ethyl-2-pentanone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoylhydrazone of 3-methyl-3-ethyl-2-pentanone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(3-methyl-3-ethylpent-2-yl)hydrazine
		Compound of Formula V:	2-nitro-5-methylbenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
436	105°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	3-methyl-3-ethyl-2-pentanone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoylhydrazone of 3-methyl-3-ethyl-2-pentanone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(3-methyl-3-ethylpent-2-yl)hydrazine
		Compound of Formula V:	2-nitro-3-methylbenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
453		Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	2,2-dimethyl-3-pentanone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoylhydrazone of 2,2-dimethyl-3-pentanone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(2,2-dimethyl-pent-3-yl)hydrazine
		Compound of Formula V:	Benzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
470	160°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	2,2-dimethyl-3-pentanone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoylhydrazone of 2,2-dimethyl-3-pentanone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(2,2-dimethylpent-3-yl)hydrazine
		Compound of Formula V:	2-nitrobenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
471		Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	2,2-dimethyl-3-butanone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoylhydrazone of 2,2-dimethyl-3-butanone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(2,2-dimethylbut-3-yl)hydrazine
		Compound of Formula V:	2-nitro-5-methylbenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
472	170°C	Compound of Formula VI:	4-toluoylhydrazine
		Compound of Formula VII:	2,2-dimethyl-3-pentanone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	4-toluoylhydrazone of 2,2-dimethyl-3-pentanone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(4-toluoyl)-2-(2,2-dimethylpent-3-yl)hydrazine
		Compound of Formula V:	3,5-dimethylbenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water
546	171°C	Compound of Formula VI:	2,3-dimethylbenzoyl hydrazine
		Compound of Formula VII:	Pinacolone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	(2,3-dimethylbenzoyl)hydrazone of pinacolone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(2,3-dimethylbenzoyl)-2-(1,2,2-trimethylpropyl) hydrazine
		Compound of Formula V:	3,5-dimethylbenzoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

Ex. No.	m.p.	Reactants	
547	160°C	Compound of Formula VI:	2,3-dimethylbenzoyl hydrazine
		Compound of Formula VII:	Pinacolone
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula VIII:	(2,3-dimethylbenzoyl)hydrazone of pinacolone
		Reducing Agent:	Sodium cyanoborohydride
		Solvent:	Methanol
		Catalyst:	Acetic acid
		Compound of Formula IX:	1-(2,3-dimethylbenzoyl)-(1,2,2-trimethylpropyl) hydrazine
		Compound of Formula V:	3-toluoyl chloride
		Base:	Sodium hydroxide
		Solvent:	Toluene and water

By following substantially the procedures in Example 220 and using the reactants shown below in Table V, the products of Examples 171, 172, 191, 192, 193, 212, 213, 221 through 223, 232, 233, 293, 326, 331, 379, 397, 398, 425 and 458 are prepared.

Table V

Ex. No.	Compound of Formula XI	Compound of Formula XII	Base	Solvent	m.p.
168	3,4-dimethoxy-benzoyl chloride	N'-t-butyl-N'-benzoylhydrazine	sodium hydroxide	toluene and water	
170	2-chloromethyl-benzoyl chloride	N'-t-butyl-N'-benzoyl hydrazine	sodium hydroxide	toluene and water	198-199°C
171	4-n-propylbenzoyl chloride	N'-t-butyl-N'-benzoyl hydrazine	sodium hydroxide	toluene and water	210°C
172	2-nitrobenzoyl chloride	N'-t-butyl-N'-benzoyl hydrazine	sodium hydroxide	toluene and water	215°C
191	3,4-dichloro-benzoyl chloride	N'-t-butyl-N'-(4-chlorobenzoyl) hydrazine	sodium hydroxide	toluene and water	238°C
192	4-n-heptyl-benzoyl chloride	N'-t-butyl-N'-(4-chlorobenzoyl) hydrazine	sodium hydroxide	toluene and water	135°C
193	4-n-propyl-benzoyl chloride	N'-t-butyl-N'-(4-chlorobenzoyl) hydrazine	sodium hydroxide	toluene and water	163°C
212	2-fluoro-benzoyl chloride	N'-t-butyl-N'-(4-chlorobenzoyl) hydrazine	sodium hydroxide	toluene and water	215°C
213	2,4-dichloro-benzoyl chloride	N'-t-butyl-N'-(4-chlorobenzoyl) hydrazine	sodium hydroxide	toluene and water	247°C
221	3-nitrobenzoyl chloride	N'-t-butyl-N'-benzoylhydrazine	sodium hydroxide	toluene and water	136-139°C
222	2,6-dichloro-benzoyl chloride	N'-t-butyl-N'-benzoylhydrazine	sodium hydroxide	toluene and water	256-258°C

Ex. No.	Compound of Formula XI	Compound of Formula XII	Base	Solvent	m.p.
223	2,4-difluoro-benzoyl chloride	N'-t-butyl-N'-benzoylhydrazine	sodium hydroxide	toluene and water	202-205°C
232	4-nitrobenzoyl chloride	N'-t-butyl-N'-benzoylhydrazine	sodium hydroxide	toluene and water	solid
233	4-cyanobenzoyl chloride	N'-t-butyl-N'-benzoylhydrazine	sodium hydroxide	toluene and water	solid
293	2-chloromethyl-benzoyl chloride	N'-t-butyl-N'-(4-chlorobenzoyl)-hydrazine	sodium hydroxide	toluene and water	224°C
326	3-bromo-4-methyl-benzoic methane-sulfonic anhydride	N'-t-butyl-N'-benzoylhydrazine	triethyl amine	methylene chloride	193-195-°C
331	4-fluorobenzoyl chloride	N'-t-butyl-N'-benzoylhydrazine	sodium hydroxide	toluene and water	200°C
379	2,3-dimethyl-benzoylchloride	N'-t-butyl-N'-(3-toluoyl)-hydrazine	sodium hydroxide	toluene and water	190-191°C
397	2-methyl-3-chloro-benzoyl chloride	N'-t-butyl-N'-(3-toluoyl)-hydrazine	sodium hydroxide	toluene and water	231-233°C
398	2-methyl-3-chloro-benzoyl chloride	N'-t-butyl-N'-benzoylhydrazine	sodium hydroxide	toluene and water	216°C
425	3-chloro-4-fluoro-benzoyl chloride	N'-t-butyl-N'-benzoylhydrazine	sodium hydroxide	toluene and water	198-205°C
458	3-chloro-4-fluoro-benzoyl chloride	N'-t-butyl-N'-(3,4-dichloro-benzoyl)hydrazine	sodium hydroxide	toluene and water	220-222°C

It will be appreciated by those skilled in the art that compounds of Formula I can be used as precursors for preparing other compounds of Formula I by procedures well known to those skilled in the art. For example, a suitable compound of Formula I can be reduced, alkylated, substituted, esterified, hydrolyzed or the like.

Using a nitrobenzoyl compound of Formula I as a reactant and reducing it, followed in certain cases by an addition reaction (such as alkylation) under the conditions (additional reactant, base or acid, and solvent) set forth in Table VI, the products of Examples 329, 330, 350, 351, 352, 353, 372, 375, 473 and 484 are prepared.

TABLE VI

Ex. No.	Compound of Formula I	Reactant	Base or Acid	Solvent	m.p.
162	N-benzoyl-N'-t-butyl-N'-(4-formylbenzoyl)-hydrazine	sodium borohydride		methanol	158-161°C
329	N-benzoyl-N'-t-butyl-N'-(3-nitrobenzoyl)-hydrazine	zinc dust		acetic acid	oil
330	N-benzoyl-N'-t-butyl-N'-(2-nitrobenzoyl)-hydrazine	zinc dust		acetic acid	>250°C
350	N-(2-nitro-3-methoxybenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine	zinc dust		acetic acid	138-192°C
351	N-(4-nitrobenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine	hydrogen, platinum carbon		ethyl acetate-methanol	>260°C
352	N-(4-aminobenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine	methyl chloroformate	pyridine	methylene chloride	213-216°C
353	N-(4-aminobenzoyl)-N'-t-butyl-N'-(4-chlorobenzoyl)hydrazine	acetic anhydride			248-252°C
354	N-(2-nitro-3-methoxybenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine	1. H_2/catalyst 2. AC_2O		ethyl acetate	

Ex. No.	Compound of Formula I	Reactant	Base or Acid	Solvent	m.p.
372	N-(3-nitrobenzoyl)-N'-t-butyl-N'-(3-toluoyl)-hydrazine	zinc dust		aqueous acetic acid	218-221°C
374	N't-butyl-N-(4-acetylbenzoyl)-N'-(3-toluoyl)-hydrazine	sodium borohydride		Methanol	
375	N-(3-aminobenzoyl)-N'-t-butyl-N'-(3-toluoyl)-hydrazine	methacryloyl chloride	sodium hydroxide	water	170-175°C
473	N-(2-nitro-3-methoxybenzoyl)-N'-t-butyl-N'-benzoylhydrazine	zinc dust	ammonium chloride	aqueous ethanol	200°C
484	N-(2-methyl-3-nitro benzoyl)-N'-t-butyl-N'-(3-toluoyl) hydrazine	zinc dust	ammonium chloride	aqueous ethanol	197-199°C

Using a chloromethylbenzoyl compound of Formula I as a reactant and performing a substitution reaction under the conditions (base or acid, and solvent) set forth in Table VII, the products of Examples 159, 161, 162, 361, 362, 363 and 367 are prepared.

TABLE VII

Ex. No.	Compound of Formula I	Reactant	Base or Acid	Solvent	m.p.
159	N-benzoyl-N'-t-butyl-N'-(3-chloromethylbenzoyl) hydrazine	sodium acetate		N,N-dimethyl-formamide	oil
161	N-benzoyl-N'-t-butyl-N'-(3-chloromethylbenzoyl) hydrazine	p-thiocresol	sodium hydroxide	toluene-water	140-143°C
294	N-(2-chloromethyl-benzoyl)-N"-t-butyl-N'-(4-chlorobenzoyl)-hydrazine	diethylamine		tetra-hydro-furan	
361	N-(4-chloromethyl benzoyl)-N'-t-butyl-N'-benzoyl hydrazine	sodium acetate		N,N-dimethyl-formamide	glass
362	N-(4-chloromethyl benzoyl)-N'-t-butyl-N'-benzoyl hydrazine	potassium thiocyanate		ethanol	glass
363	N-(4-acetoxymethyl benzoyl)-N'-t-butyl-N'-benzoylhydrazine		sodium hydroxide	methanol	oil
367	N-(4-chloromethyl benzoyl)-N'-t-butyl-N'-benzoyl hydrazine	potassium cyanide		dimethyl formamide	160-162°C

Using an acetyloxybenzoyl compound of Formula I as a reactant and performing a hydrolysis, under the conditions (base and solvent) set forth in Table VIII, the products of Examples 165, 203, 271, 285, 333 and 614 are prepared.

TABLE VIII

Ex. No.	Compound of Formula I	Reactant	Base or Acid	Solvent	m.p.
151	N-benzoyl-N'-t-butyl-N'-(2-acetoxybenzoyl)-hydrazine		sodium hydroxide	methanol	
165	N-benzoyl-N'-(1,2,2-trimethylpropyl)-N'-2-acetoxybenzoyl)hydrazine		sodium hydroxide	methanol	220-224°C
203	N-benzoyl-N'-t-butyl-N'-(3-acetoxybenzoyl) hydrazine		potassium hydroxide	methanol	200°C
271	N-(4-acetoxybenzoyl)-N'-t-butyl-N'-benzoyl hydrazine		potassium hydroxide	methanol	210°C
285	N-(4-acetoxybenzoyl)-N'-t-butyl-N'-(3-toluoyl) hydrazine		potassium hydroxide	methanol	170°C
333	N-(3-acetoxybenzoyl)-N'-t-butyl-N'-benzoyl hydrazine		potassium hydroxide	methanol	glass
349	N-(4-carbomethoxy benzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine		sodium hydroxide	aqueous tetra-hydro-furan	
614	N,N'-bis-(2-acetoxy-benzoyl)-N'-t-butyl hydrazine		sodium hydroxide	methanol	oily solid

Using a hydroxybenzoyl compound of Formula I as a reactant and performing an alkylation or esterification, under the conditions (base and solvent) set forth in Table IX, the products of Examples 144, 286, 335, 345, 358, 359, 360, 365, 366 and 385 are prepared.

TABLE IX

Ex. No.	Compound of Formula I	Reactant	Base	Solvent	m.p.
144	N-benzoyl-N'-t-butyl-N'-(4-hydroxybenzoyl) hydrazine	allyl bromide	potassium t-butoxide	tetra-hydro-furan	177-180°C
286	N-(4-hydroxybenzoyl)-N'-t-butyl-N'-benzoyl-hydrazine	allyl bromide	potassium t-butoxide	tetra-hydro-furan	Oil
335	N-(3-hydroxybenzoyl)-N'-t-butyl-N'-benzoyl-hydrazine	allyl bromide	sodium hydride	dimethyl-formamide	Oil
345	N-(3-hydroxybenzoyl)-N'-t-butyl-N'-benzoyl-hydrazine	vinyl chloroformate	potassium t-butoxide	tetra-hydro-furan	low melting solid
358	N-(4-hydroxybenzoyl)-N'-t-butyl-N'-benzoyl-hydrazine	chloromethyl-methyl ether	potassium t-butoxide	tetra-hydro-furan	Oil
359	N-(4-hydroxybenzoyl)-N'-t-butyl-N'-benzoyl-hydrazine	N,N-dimethyl-carbamoyl chloride	potassium t-butoxide	tetra-hydro-furan	low melting solid
360	N-(4-hydroxybenzoyl)-N'-t-butyl-N'-benzoyl-hydrazine	ethyl bromo-acetate	potassium t-butoxide	tetra-hydro-furan	low melting solid
365	N-(4-hydroxybenzoyl)-N'-t-butyl-N'-benzoyl-hydrazine	chloromethyl-methyl sulfide	sodium hydride	dimethyl-formamide	Oil
366	N-(4-hydroxybenzoyl)-N'-t-butyl-N'-benzoyl-hydrazine	isobutyl bromide	potassium t-butoxide	dimethyl formamide	Oil
385	N-(4-hydroxybenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine	chloromethyl-methyl ether	potassium t-butoxide	tetra-hydro-furan	Oil

Using a compound of Formula I as a reactant and performing the stated reaction under the conditions (additional reactant, base or acid, and solvent) set forth in Table X, the products of Examples 149, 162, 164, 166, 368, 369, 373, 374, 376, 386 and 541 are prepared.

TABLE Y

Example No.	Compound Prepared, Reactants, Reaction Conducted and Conditions	m.p. °C
149	N-benzoyl-N'-t-butyl-N'-(4-methanesulfonylbenzoyl)hydrazine was prepared from N-benzoyl-N'-t-butyl-N'-(4-methylthiobenzoyl)hydrazine using meta-chloroperbenzoic acid in methylene chloride in an oxidation reaction.	183-185.5
164	N-benzoyl-N'-t-butyl-N'-(4-carboxybenzoyl)-hydrazine was prepared from N-benzoyl-N'-t-butyl-N'-(4-methoxycarbonyl-benzoyl)hydrazine sodium hydroxide as a base and methanol as solvent in a hydrolysis reaction.	212-214
166	N-benzoyl-N'-t-butyl-N'-(4-(2,2-dichloroethenyl)benzoyl)hydrazine was prepared from N-benzoyl-N'-t-butyl-N'-(4-formylbenzoyl)hydrazine using triphenylphosphine in carbon tetra-chloride as solvent in a Wittig-type reaction.	Oily Solid

Example No.	Compound Prepared, Reactants, Reaction Conducted and Conditions	m.p. °C
368	N-(4-(1,2-epoxypropyl)benzoyl)-N'-t-butyl-N'-benzoylhydrazine was prepared from N-(4-(1-propenyl)benzoyl)-N'-t-butyl-N'-benzoylhydrazine using meta-chloroperbenzoic acid in methylene chloride as solvent in an oxidation reaction.	Solid
369	N-(4-acetylsemicarbazone)-N'-t-butyl-N-(3-toluoyl)hydrazine was prepared from N-(4-acetylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)-hydrazine using semicarbazide in ethanol solvent with hydrochloric acid catalyst in a condensation reaction.	180-184
373	N-(4-(2-hydroxy-1,1-dimethylethylamino-carbonyl)benzoyl)-N'-t-butyl-N'-(3-toluoyl)-hydrazine was prepared from N-(4-methoxycarbonylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine using 2-amino-2-methylpropanol in a condensation reaction.	low melting solid
374	N-(4-(2-hydroxyethyl)benzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine was prepared from N-(4-acetylbenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine using sodium borohydride in methanol solvent in a reduction reaction.	Oily solid

Example No.	Compound Prepared, Reactants, Reaction Conducted and Conditions	m.p. °C
376	N-(3-carboxybenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine was prepared from N-(3-cyanobenzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine using potassium hydroxide as base in methanol solvent in a hydrolysis reaction.	202-206
386	N-(4-(1-methylethenyl)benzoyl)-N'-t-butyl-N'-(3-toluoyl)hydrazine was prepared from N-(4-acetylbenzoyl)-N'-t-butyl-N'-(3-toluoyl) hydrazine using methyltriphenylphosphonium bromide and n-butyl lithium as base and tetrahydrofuran solvent in a Wittig reaction.	low melting solid
541	N-(4-(2-hydroxyethyl)benzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine was prepared from N-(4-(2-acetoxyethyl)benzoyl)-N'-t-butyl-N'-(3,5-dimethylbenzoyl)hydrazine using sodium hydroxide as base and methanol as solvent in a hydrolysis.	185-187

As previously noted, the compounds of the present invention exhibit excellent insecticidal activity and are most active against insects of the orders Lepidoptera and Coleoptera.

In general, for the control of insects in agriculture, horticulture and forestry, the compounds of the present invention may be used at a dosage corresponding to from about 10 grams to about 10 kilograms of the active substance per hectare and from about 100 grams to about 5 kilograms per hectare of the active substance is preferred. The exact amount of dosage for a given situation can be routinely determined and depends on a variety of factors, for example, the substance used, the kind of insect, the formulation used, the state of the crop infested with the insect and the prevailing weather conditions. The term "insecticidal" as employed in the specification and claims of this application is to be construed as any means which adversely affects the existence of growth of the target insects at any stage in their life cycle. Such means can comprise a complete killing action, eradiction, arresting in growth, inhibition, reducing in number, reproductive inhibition (such as ovicidal or chemisterilant) or any combination thereof. The terms "control" or "combat", which are used interchangeably in the present specification and claims are to be construed as meaning "insecticidal" or protecting plants from insect damage. By "insecticidally effective amount" is meant that dosage of active substance sufficient to exert insect "control".

The compounds of the present invention, for practical applications, can be utilized in the form of compositions or formulations. Examples of the preparation of compositions and formulations can be found in the American Chemical Society publication "Pesticidal Formulation Research," (1969), Advances in Chemistry Series No. 86, written by Wade Van Valkenburg; and the Marcel Dekker, Inc. publication "Pesticide Formulations," (1973), edited by Wade Van Valkenburg. In these compositions and formulations, the active substance or substances are mixed, for example in an amount up to 95% by weight of active insecticidal ingredient, with inert agronomically acceptable (i.e., plant compatible and/or pesticidally inert) diluents or extenders such as solid carrier material or liquid carrier material, of the type usable in conventional

compositions or formulations. By agronomically acceptable carrier is meant any substance which can be used to dissolve, disperse or diffuse the active ingredient in the composition without impairing the active ingredient's effectiveness and which by itself has no significant detrimental effect on the soil, equipment, desirable plants or agronomic environment. If desired, conventional adjuvants such as surfactants, stabilizers, antifoam agents and antidrift agents may also be added.

Examples of compositions and formulations according to the invention are aqueous solutions and dispersions, oily solutions and oil dispersions, pastes, dusting powders, wettable powders, emulsifiable concentrates, flowables, granules, baits, invert emulsions, aerosol compositions and fumigating candles.

Wettable powders, pastes, flowables and emulsifiable concentrates are concentrated preparations which are diluted with water before or during use.

Baits are preparations generally comprising a food or other substance attractive to the target pest, that includes at least one lethal or non-lethal toxicant. Lethal toxicants kill the pest upon ingesting the bait while non-lethal toxicants change the behavior, feeding habits and physiology of the pest for the purpose of control.

The invert emulsions are mainly used for air application, where large areas are treated with a comparatively small amount of preparation. The invert emulsion may be prepared in the spraying apparatus shortly before, or even during, the spraying operation by emulsifying water in an oil solution or an oil dispersion of the active substance.

Compositions and formulations are prepared in a known manner, for instance by extending the active compounds with conventional dispersible liquid diluent carriers and/or dispersible solid carriers optionally with the use of carrier vehicle assistants, e.g., conventional surface-active agents, including emulsifying agents and/or dispersing agents, whereby, for example, in the case where water is used as diluent, organic solvents may be added as auxiliary solvents. The following may be chiefly considered for use as a conventional carrier vehicles for this purpose: aerosol propellants which are gaseous at normal temperatures and pressures, such as halogenated hydrocarbons, e.g., dichlorodifluoromethane and trifluorochloromethane, as well as butane, propane, nitrogen and carbon dioxide; inert dispersible liquid diluent carriers, including inert organic solvents, such as aromatic hydrocarbons (e.g., benzene, toluene, xylene, alkyl naphthalenes, etc.), halogenated, especially chlorinated, aromatic hydrocarbons (e.g., chlorobenzenes, etc.), cycloalkanes (e.g., cyclohexane, etc.), paraffins (e.g., petroleum or mineral oil fractions), chlorinated aliphatic hydrocarbons (e.g., methylene chloride, chloroethylenes, etc.), vegetable oils (e.g., soybean oil, cottonseed oil, corn oil, etc.), alcohols (e.g., methanol, ethanol, propanol, butanol, glycol, etc.) as well as ethers and esters thereof (e.g., glycol monomethyl ether, etc.), amines (e.g., ethanolamine, etc.), amides - (e.g., dimethyl formamide, etc.), sulfoxides (e.g., dimethyl sulfoxide, etc.), acetonitrile, ketones (e.g., acetone, methyl ethyl ketone, methyl isobutyl ketone, cyclohexanone, isophorone, etc.), and/or water; solid carriers including ground natural minerals, such as kaolins, clays, talc, chalk, quartz, attapulgite, montmorillonite or diatomaceous earth, and ground synthetic minerals, such as highly-dispersed silicic acid, alumina and silicates; solid carriers for granules include crushed and fractionated natural rocks such as calcite, marble, pumice, sepiolite and dolomite, as well as synthetic granules of inorganic and organic meals, and granules of organic material such as sawdust, coconut shells, corn cobs and tobacco stalks. The following may be chiefly considered for use as conventional carrier vehicle assistants: emulsifying agents, such as cationic and/or nonionic and/or anionic emulsifying agents (e.g., polyethylene oxide esters of fatty acids, polyethylene oxide ethers of fatty alcohols, alkyl sulfates, alkyl sulfonates, aryl sulfonates, albumin hydrolysates, etc., and especially alkyl arylpolyglycol ethers, magnesium stearate, sodium oleate, etc.); and/or dispersing agents, such as lignin, sulfite waste liquors, methyl cellulose, etc.

Adhesives such as carboxymethylcellulose and natural; and synthetic polymers in the form of powders, granules or latices, such as gum arabic, polyvinyl alcohol and polyvinyl acetate, can be used in the formulations.

If desired, it is possible to use colorants in compositions and formulations containing compounds of the present invention such as inorganic pigments, for example, iron oxide, titanium oxide and Prussian Blue, and organic dyestuffs, such as alizarin dyestuffs, azo dyestuffs and metal phthalocyanine dyestuffs, and trace nutrients such as salts of iron, manganese, boron, copper, cobalt, molybdenum and zinc.

The active compounds of the present invention may be employed alone or in the form of mixtures with one another and/or with such solid and/or liquid dispersible carrier vehicles and/or with other known compatible active agents, especially plant protection agents, such as other insecticides, arthropodicides, nematicides, fungicides, bactericides, rodenticides, herbicides, fertilizers, growth-regulating agents, synergists, etc., if desired, or in the form of particular dosage preparations for specific application made therefrom, such as solutions, emulsions, suspensions, powders, pastes, and granules which are thus ready for use.

As concerns commerically marketed preparations, these generally contemplate carrier composition mixtures in which the active compound is present in an amount substantially between about 0.1% and 99% by weight, and preferably between about 1% and 75% by weight, of the mixture. Carrier composition mixtures suitable for direct application or field application generally contemplate those in which the active compound is used in an amount substantially between about 0.0001% and 5%, preferably between about 0.001% and 3%, by weight of the mixture. Thus the present invention contemplates overall formulations and compositions which comprise mixtures of a conventional dispersible carrier such as (1) a dispersible inert finely divided carrier solid, and/or (2) a dispersible carrier liquid such as inert organic solvent and/or water, preferably including a surface-active effective amount of a carrier vehicle assistant (e.g., a surface-active agent, such as an emulsifying agent and/or a dispersing agent), and an amount of the active compound generally, between about 0.0001% and about 99% by weight of the composition, preferably between about 0.001% and about 90% by weight of the composition, and more preferably between about 0.01% and about 75% by weight of the composition, which is effective for the purpose in question.

The active compounds can be applied as sprays by methods commonly employed, such as conventional high-gallonage hydraulic sprays, low gallonage sprays, ultra-low-volume sprays, airblast spray, aerial sprays, and dusts. If low volume applications are desired, a solution of the compound is usually used. In ultra-low-volume applications, a liquid composition containing the active compound is usually applied as a spray (e.g., mist) by means of atomizing equipment in finely divided form (average particle size of from about 50 to about 100 microns or less) using airplane crop spraying techniques. Typically only a few liters per hectare are needed and often amounts up to about 15 to 1000 g/hectare, preferably about 40 to 600 g/hectare are sufficient. With ultra-low-volume, it is possible to use highly concentrated liquid compositions with said liquid carrier vehicles containing from about 20 to about 95% by weight of the active compound.

Furthermore, the present invention contemplates methods of killing, combatting or controlling insects, which comprises contacting insects with a correspondingly combative or toxic amount (i.e., an insecticidally effective amount) of at least one active compound of the invention alone or together with a carrier vehicle - (composition or formulation) as noted above. The term "contacting" as employed in the specification and claims of this application is to be construed as applying to at least one of (a) such insects and (b) the corresponding habitat thereof (i.e., the locus to be protected, for example, to a growing crop or to an area where a crop is to be grown) the active compound of this invention alone or as a constituent of a composition or formulation. The instant formulations or compositions are applied in the usual manner, for instance by spraying, atomizing, vaporizing, scattering, dusting, watering, squirting, sprinkling, pouring, fumigating, dry dressing, moist dressing, wet dressing, slurry dressing, encrusting and the like.

It will be realized, of course, that the concentration of the particular active compound utilized in admixture with the carrier vehicle will depend upon such factors as the type of equipment employed, method of application, area to be treated, types of pests to be controlled and degree of infestation. Therefore, in special cases it is possible to go above or below the aforementioned concentration ranges.

Granular preparations are produced for example, by taking up the active substance in a solvent and by using the resulting solution, as the case may be in the presence of a binder, to impregnate a granular carrier material, such as porous granules (for example, pumice and attaclay), or chopped tobacco stems or the like.

A granular preparation (frequently termed a "pellet") may alternatively be produced by compressing the active substance together with powdered minerals in the presence of lubricants and binders and by disintegrating and straining the composite to the desired grain size.

Dusts are obtainable by intimately mixing the active substance with an inert solid carrier material in a concentration of from about 1 to about 50% by weight. Examples of suitable solid carrier materials are talc, kaolin, pipe clay, diatomaceous earth, dolomite, gypsum, chalk, bentonite, attapulgite and colloidal SiO_2 or mixtures of these and similar substances. Alternatively organic carrier materials such as, for example, ground walnut shells may be used.

Wettable powders and flowables are produced by mixing from about 10 to about 99 parts by weight of a solid inert carrier such, for example, as the aforementioned carrier materials with from about 1 to about 80 parts by weight of the active substance optionally dissolved in a volatile solvent such as acetone, from about 1 to about 5 parts by weight of a dispersing agent such, for example as the lignosulfonates or alkylnaphthalene sulfonates known for this purpose and preferably also from about 0.5 to about 5 parts by weight of a wetting agent, such as fatty alcohol sulfates, or alkylarylsulfonates of fatty acid condensation products. In the case of flowables, a liquid inert carrier such as water is also included.

To produce emulsifiable concentrates the active compound is dissolved or finely divided in a suitable solvent which preferably is poorly miscible with water, an emulsifier being added to the resulting solution. Examples of suitable solvents are xylene, toluene, high-boiling aromatic petroleum distillates, for example solvent naphtha, distilled tar oil and mixtures of these liquids. Examples of suitable emulsifiers are alkylphenoxypolyglycol ethers, polyoxyethylene sorbitan esters of fatty acids or polyoxyethylene sorbitol esters of fatty acids. The concentration of the active compound in these emulsifiable concentrates is not restricted within narrow limits and may vary between about 2% and about 50% by weight depending upon toxicant solubility. A suitable liquid highly concentrated primary composition other than an emulsifiable concentrate is a solution of the active substance in a liquid which is readily miscible with water, for example, acetone, to which solution a dispersant and, as the case may be, a wetting agent are added. When such a primary composition is diluted with water shortly before or during the spraying operation an aqueous dispersion of the active substance is obtained.

An aerosol preparation according to the invention is obtained in the usual manner by incorporating the active substance or a solution thereof in a suitable solvent in a volatile liquid suitable for use as a propellant such, for example, as a mixture of chlorine and fluorine derivatives of methane and ethane.

Fumigating candles or fumigating powders, i.e., preparations which when burning are capable of emitting a pesticidal smoke, are obtained by taking up the active substance in a combustible mixture which may, for example, comprise a sugar or a wood, preferably in the ground form, as a fuel, a substance to sustain combustion such, for example, as ammonium nitrate or potassium chlorate, and furthermore a substance for retarding combustion, for example kaolin, bentonite and/or colloidal silicic acid.

A bait preparation comprises a food or other substance attractive to pests, a carrier, the toxicant and may optionally include other substances commonly used in preparations of this kind, such as, a preservative to inhibit bacterial and fungal growth, a waterproofing agent to prevent disintegration under wet conditions and dyes or colorants as described above.

In addition to the aforementioned ingredients, the preparations according to the invention may also contain other substances commonly used in preparations of this kind.

For example, a lubricant, such as calcium stearate or magnesium stearate, may be added to a wettable powder or to a mixture to be granulated. Furthermore, there may, for example, be added "adhesives" such as polyvinylalcohol cellulose derivatives or other colloidal materials, such as casein, to improve the adherence of this pesticide to the surface to be protected.

In its mechanical aspects therefore a process of the invention for improving the commercial value and/or profitability of vendible crops from plants whose growth is affected or likely to be affected by insects comprises (1) charging to a container, fumigation device or mechanical dissemination device an insecticidal composition of the invention as hereinbefore described, (2) using the container, fumigator or mechanical dissemination device to apply the insecticidal composition, in the form of granules, dust, smoke, vapour or surfactant-containing liquid preparation to growing plants or to a growth medium where the plants are growing or are to be grown, or to the insects themselves, (3) controlling the dose of the active ingredient during this application step so that the rate of application of active insecticidal compound is sufficient to combat the insects but is insufficient to cause an unacceptably adverse effect on the crop plants growing or to be grown in the treated area.

Representative preparation of compositions and formulations including the compounds of the present invention are set forth below as Examples A through I by way of illustration but not limitation.

Example A

Granular

Ingredient	%/wt.
Toxicant and toxicant impurities	0.25
Triton® X-305 (binder) (Octylphenyl-30-ethylene oxide ethanol)	0.25
Agsorb® 24/48 (diluent) (Montmorillonite clay)	99.50

Preparation: The toxicant and Triton® X-305 are dissolved into methylene chloride and the mixture is added to the Agsorb® with continuous mixing. The methylene chloride is then allowed to evaporate.

Example B

Dust

Ingredient	%/wt.
Toxicant and toxicant impurities	1.0
Talc	99.0

Preparation: Toxicant is dissolved in excess acetone and the mixture is impregnated onto the talc. The acetone is then permitted to evaporate.

Example C

Wettable Powder

Ingredient	%/wt.
Toxicant and toxicant impurities	31.3
Duponal® WA Dry (wetter) (Sodium lauryl sulfate)	2.0
Reax® 45A (dispersant) (Sodium lignin sulfonate)	5.0
Barden clay (diluent)	31.7
HiSil® 233 (diluent) (Sodium silica)	30.0

Preparation: The toxicant, optionally dissolved in a volatile solvent, is absorbed onto the Barden clay and HiSil® carriers. The Duponal® and Reax® are then added and the entire dry mixture blended until homogeneous. The composition is then micronized to a fine particle size.

Example D

Emulsifiable Concentrate

Ingredient	%/wt.
Toxicant and toxicant impurities	15.0
Sponto® 232T (emulsifier) (Anionic and nonionic blend of the following surfactants: calcium dodecyl benzene sulfonate; and ethoxylated alkylphenol)	6.0
Sponto® 234T (emulsifier) (Anionic and nonionic blend of the following surfactants: calcium dodecyl benzene sulfonate; and ethoxylated alkylphenol)	4.0
Cyclohexanone (solvent)	22.5

Tenneco® 500-100 (solvent) (Aromatic solvent mixture principally comprising xylene, cumene and ethyl benzene having a boiling point range of 290-345°F)	52.5

Preparation: All ingredients are mixed together with continuous agitation until a homogeneous clear solution is obtained.

Example E

Aerosol

Ingredient	%/wt.
Toxicant and toxicant impurities	0.5
Freon 12	99.5

Preparation: The components are mixed and packaged under pressure in a suitable container equipped with a release spray valve.

Example F

Fumigating Candle or Fumigating Powder

Ingredient	%/wt.
Toxicant and toxicant impurities	1.0
Wood dust	96.0
Starch	3.0

Preparation: Toxicant, wood dust, and starch are blended together and then molded into a candle using a small amount of water to activate the starch.

Example G

Bait

Method A

Ingredient	%/wt.
Toxicant and toxicant impurities	1.00
Wheat Bran (carrier and attractant)	89.95
Corn Syrup (attractant)	7.00
Corn Oil (attractant)	2.00
Kathon® 4200 (preservative) (2-n-octyl-4-isothiazolin-3-one)	0.05

Preparation: The corn oil and corn syrup are added to the wheat bran with adequate mixing. The toxicant and Kathon® are premixed with excess acetone and this solution is added to the wheat bran base with continued mixing. The acetone is then permitted to evaporate.

Method B

Ingredient	%/wt.
Toxicant and toxicant impurities	0.06
Granulated Sugar (carrier and attractant)	99.94

Example H

Pellet

Same as Example G, Method A, with this addition: the bait composition is formed into 1/4" diameter by 3/8" long pellets using a suitable die and press apparatus.

Example I

Flowable

Ingredient	%/wt.
Toxicant and toxicant impurities	31.3
Duponal® WA Dry (wetter) (Sodium lauryl sulfate)	2.0
Reax® 45Å (dispersant) (Sodium lignin sulfonate)	5.0
HiSil® 233 (diluent) (Sodium silica)	30.0
Kelzan® (thickener) (Xanthan gum)	0.5
Water	31.2

Preparation: The toxicant is absorbed onto the HiSil® carrier. The Duponal® and Reax® are then added and the entire dry mixture blended until homogeneous. The composition is then micronized to a fine particle size. The resulting powder is suspended in water and the Kelzan® added.

Compositions and formulations according to the present invention may also include known pesticidal compounds. This expands the spectrum of activity of the preparations and may give rise to synergism.

The following known insecticidal, fungicidal and acaricidal compounds are suitable for use in such a combined preparation.

Insecticides such as:

Chlorinated hydrocarbons, for example, 2,2-bis(p-chlorophenyl)-1,1,1-trichloroethane and hexachloroepoxyoctahydrodimethanonaphthalene;

Carbamates, for example, N-methyl-1-naphthylcarbamates;

Dinitrophenols, for example, 2-methyl-4,6-dinitrophenol and 2-(2-butyl)-4,6-dinitrophenyl-3,3-dimethylacrylate;

Organic phosphorus compounds, such as dimethyl-2-methoxy-3-carbonyl-1-methylvinyl phosphate, 0,0-diethyl-0-p-nitrophenylphosphorothioate; N-monomethylamide of 0,0-dimethyldithiophosphorylacetic acid;

Diphenylsulfides, for example, p-chlorobenzyl or p-chlorophenyl sulfide and 2,4,4',5-tetrachlorodiphenylsulfide;

Diphenylsulfonates, for example, p-chlorophenylbenzenesulfonate;

Methylcarbinols, for example, 4,4-dichloro-1-trichloromethylbenzhydrol;

Quinoxaline compounds, such as methylquinoxaline dithiocarbonate;

Amidines such as N'-(4-chloro-2-methylphenyl) N,N-dimethylformamidine;

Pyrethroids such as Allethrin;

Biologicals such as Bacillus thuringiensis preparations;
Organic tin compounds such as tricyclohexyltin hydroxide;
Synergists such as piperonyl butoxide;
Insect growth regulators such as N-benzoyl-phenyl ureas, for example, diflubenzuron.

Fungicides such as:
Organic mercury compounds, for example, phenylmercuryacetate and methylmercurycyanoguanide;
Organic tin compounds, for example, triphenyltin hydroxide and triphenyltin acetate;
Alkylenebisdithiocarbamates, for example, zinc ethylenebisthiocarbamate and manganese ethylenebis-dithiocarbamate; and
2,4-dinitro-6-(2-octyl-phenylcrotonate), 1-bis(dimethylamino)phosphoryl-3-phenyl-5-amino-1,2,4-triazole, 6-methylquinoxaline-2,3-dithiocarbonate, 1,4-dithioanthraquinone-2,3-dicarbonitrile, N-trichloromethylthiophthalimide, N-trichloromethylthiotetrahydrophthalimide, N-(1,1,2,2-tetrachloroethylthio)-tetrahydrophthalimide, N-dichlorofluoromethylthio-N-phenyl-N'-dimethylsulfonyldiamide and tetrachloroisophthalonitrile.

Biological Activity

It has been found by biological evaluation that compounds according to the present invention have pesticidal activity and are capable of controlling larvae and adult forms of pests, especially insects from the orders Lepidoptera and Coleoptera and most especially insects from the order Lepidoptera. One skilled in the art will know how to determine the activity of a given compound against a given insect and the dosage required to obtain general or selective insecticidal effects. The compounds of the present invention in part affect the normal development of insects, particularly insects from the order Lepidoptera, by directly and/or indirectly influencing the moulting process.

As previously noted, the compounds of the present invention are particularly suitable for controlling plant destructive insects in crops of cultivated plants, such as, but not limited to, cotton, vegetables, corn and other cereals and the like; forestry, such as, but not limited to, birch, spruce, pine, fir and the like; and ornamental plants, flowers and trees. Compounds of the present invention are also particularly suitable for controlling insects destructive to stored commodities such as seeds and the like; fruit crops, such as, but not limited to fruit and/or citrus trees, raspberry bushes and the like; and turf, such as, but not limited to, lawns, sod and the like.

In evaluating the pesticidal activity of the compounds of this invention, the following test procedures were employed.

A test solution containing 600 parts per million (ppm) was made by dissolving the test compound in a solvent (acetone:methanol, 1:1), adding water to give an acetone:methanol:water system of 5:5:90 and then a surfactant. A 1:1 mixture of an alkylarylpolyetheralcohol (sold under the trademark Triton® X-155) and a modified phthalic glycerol alkyl resin (sold under the trademark Triton® B-1956) was utilized at the equivalent of 1 ounce per 100 gal. of test solution as a surfactant.

Initial evaluations were made on one or more of the following pests:

Code Symbol	Common Name	Latin Name
SAW	Southern Armyworm	Spodoptera eridania
MBB	Mexican Bean Beetle	Epilachna varivestis
BW	Boll Weevil	Anthonomus grandis grandis

For the foliar bean beetle and armyworm tests, individual bean (Phaseolus limensis var. Woods' Prolific) leaves are placed on moistened pieces of filter paper in Petri dishes. The leaves are then sprayed with the test solution using a rotating turntable and allowed to dry. The dishes are infested with 10 third instar larvae of Southern armyworm or Mexican bean beetle. The dishes are then covered.

For the Boll Weevil test ten adult weevils are placed in a 0.5 pint glass Mason jar containing a small cube of apple. The weevils are confined to the jars by fiberglass screen mesh secured by a screw-type rim cap. The jars are then sprayed with the test solution using a rotating turntable, directing the spray through the mesh into the jar.

TABLE XI

Initial Biological Evaluations

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
1	100[a]	0	0	80	0
2	100	0	0	20	0
3	100	60[a]	0	100	100
4	100	0	0	60	0
5	100	0	0	50	0
6	40	0	0	--[b]	--
7	100	0	0	50	0
8	10	0	0	--	--
9	100	0	0	70	100
10	100	0	0	60	0
11	100	0	0	20	100
12	0	100	0	50	0
13	100	0	0	20	100
14	0	0	0	--	--
15	100	0	0	20	0
16	100	0	0	30	100
17	100	0	0	40	100
18	100	100	0	100	100
19	100	0	100	20	0
20	100	0	0	--	--
21	100	0	0	--	--
22	100	0	0	40	100
23	100	0	100	--	--
24	100	0	80	--	--
25	100	0	0	--	--
26	100	100	0	0	100
27	0	0	0	--	--

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
58	100	20	0	20	0
59	100	70	20	20	100
60	100	40	0	0	0
61	0	0	0	60(80)	0
62	100	40	0	20	100
63	100	10	0	20	0
64	100	20	0	0(100)	10(50)
65	100	20	0	0(40)	100
66	100	70	0	40(80)	40(50)
67	100	40	0	20(80)	100
68	100	10	20	20	0
69	100	40	0	20	0
70	100	40	20	0(20)	0
71	0	60	0	0(20)	0
72	60	0	0	20	0
73	100	100	0	40(80)	100
74	100	80	0	20	0
75	100	60	0	0	0
76	100	60	0	0(20)	0
77	100	100	0	0	0
78	90	40	0	20	0
79	0	0	20	0	0
80	0	0	20	0	0
81	100	0	20	0	20
82	100	0	0	0	0
83	100	100	0	60(100)	100
84	10	0	0	0	0
85	100	30	0	0	20
86	100	30	20	0	80(100)
87	100	40	40	0	40(50)

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
88	100	20	0	0	0
89	100	0	0	0	100
90	100	0	0	0	90
91	0	0	40	0	0
92	100	50	0	0	90(100)
93	100	0	0	0	0
94	0	10	0	0	0
95	100	100	20	40(100)	100
96	100	30	0	0	0
97	100	0	20	0	0
98	100	0	0	0	100
99	100	60	0	40(80)	100
100	100	100	0	80(100)	100
101	0	0	0	20	0
102	100	0	0	20	0(40)
103	100	100	0	0(60)	100
104	100	0	0(20)	0	40(100)
105	100	0	40	0	100
106	80	0	60	0	0(100)
107	100	0	0	0(40)	100
108	100	0	0	0	0
109	100	20	0	0(100)	100
110	100	70	0	100	90(100)
111	100	100	0	0	0
112	100	100	20	20(40)	90(100)
113	100	100	0	100	100
114	100	0	0	0	10
115	100	100	0	20(60)	90(100)
116	100	10	0	0	0
117	100	10	0	40(80)	100

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
148	0	0	40	0	20(0)
149	0	0	0	0	0
150	0	0	0	0	0
151	0	0	0	0	0
152	100	0	0	0	0
153	100	0	0	0	80(90)
154	100	10	0	0	0
155	0	30	0	0(20)	0
156	0	0	0	0	0
157	0	10	20	0	0
158	20	0	0	0	0
159	10	0	0	0	0
160	0	0	0	20	0
161	30	0	0	0(20)	0
162	70	20	0	40(60)	0
163	20	20	0	0(20)	0
164	0	0	20	40	0
165	0	10	0	0	0
166	10	10	0	0	0
167	30	0	0	0	0
168	10	40	0	0	0
169	0	30	0	0	0
170	0	10	0	0	0
171	100	40	0	0	0
172	100	0	0	0	0
173	60	30	20	0	0
174	100	0	0	0	80(100)
175	100	0	0	0	0
176	0	10	0	0	0
177	100	30	0	0	10

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
178	100	10	0	0	10
179	90	0	20	0	0
180	100	0	0	0	0
181	100	10	0	0	0
182	100	0	0	0	0
183	30	80	0	0(100)	0(100)
184	100	10	0	0	0
185	0	0	0	0	0
186	0	0	0	0	0
187	100	0	0	0(20)	0(10)
188	0	0	0	0	0
189	0	0	20	0	0
190	100	0	0	0(40)	20(60)
191	90	0	0	0	0
192	20	0	0	0	0
193	100	0	0	0	0
194	100	80	20	20(60)	100
195	100	80	0	80(100)	100
196	100	0	0	0	100
197	100	0	20	0(20)	100
198	100	0	0	20	90(100)
199	20	10	0	20	30
200	100	0	0	0(20)	90
201	100	0	0(60)	0	20(30)
202	40	20	0	40	0
203	60	0	20(60)	0	0
204	50	0	0	0	0
205	100	10	0	20	100
206	100	10	0	0	100
207	0	0	0	0	0

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
208	100	0	0	0(20)	100
209	100	10	0	60(20)	100
210	0	10	40	0	0
211	20	10	0	0	0
212	100	0	0	0	90(100)
213	100	0	40	0	0
214	100	0	0	0	40(60)
215	100	10	0	0(20)	100
216	100	0	20	20	50(60)
217	100	60	0	20	100
218	90	10	0	0	0
219	0	0	0	0	0
220	100	0	0	0	100
221	60	10	0	20	0
222	0	0	0	0	0
223	100	10	0	40	100
224	40	10	20	0	0
225	100	20	0	0(20)	100
226	100	10	0	0	0
227	100	0	0	0	30(40)
228	100	0	20	0(40)	100
229	60	20	0	0	0
230	100	50	0	60(80)	100
231	60	20	0	40	60
232	100	0	0	20	0
233	100	0	0	40	60
234	100	10	0	0	100
235	100	60	0	100	100
236	100	10	0	0	30
237	100	20	0	0	0

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
238	90	60	0	0	0
239	100	0	0	0	0
240	30	10	0	0	0
241	100	0	0	0	0
242	50	30	0	0	0
243	10	20	0	0	0
244	100	0	0	0	70(80)
245	100	0	0	0	80(90)
246	100	10	0	0	0
247	100	0	0	0	0
248	100	0	0	0	0
249	100	0	0	0	0
250	80	50	0	0	10
251	100	20	20	20(40)	60
252	100	0	0	0(20)	100
253	100	10	20(40)	0	20(30)
254	100	0	0	0	0
255	100	100	0	0	0
256	100	0	0	0	0
257	100	0	0	20	20
258	0	90	40	100	0
259	100	10	0	0	0
260	100	20	0	0	0
261	0	10	0	0	0
262	60	0	0	0	0
263	100	30	0	20	40
264	80	0	80(100)	0	10(30)
265	0	10	0	0	0
266	0	10	0	0	0
267	100	0	0	0	0

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
268	40	0	0	0	0
269	100	0	60(80)	0	0
270	100	0	0	20(40)	0
271	100	10	0	20(0)	70
272	40	10	0	0	0
273	100	0	40(100)	0	0
274	100	10	0	20	50(90)
275	0	0	0	0	0
276	100	10	20(60)	0	0
277	100	30	0	20	0
278	60	0	0	0	0
279	100	10	0	0	0
280	100	10	20(80)	0	0
281	100	0	0	0	0
282	100	30	0	0	0
283	100	0	0	0	0
284	90	50	0	0	0
285	100	50	0	0	0
286	100	0	0	0	0
287	100	10	0	0	0
288	100	0	0	0	0
289	100	40	0	20	0
290	100	50	0	0	0
291	100	30	0	0	80(90)
292	100	10	0	0	100
293	20	30	20	0	0
294	0	0	0	0	0
295	100	100	0	0	60(80)
296	100	50	0	60(100)	100
297	100	40	0	0	0

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
298	80	30	0	0	0
299	100	20	0	0	0
300	100	0	0	0(20)	100
301	100	0	0	0	70(100)
302	100	0	0	0	0
303	100	30	0	0	0
304	70	90	0	0	0
305	100	40	0	0	60(100)
306	100	40	0	0	0
307	100	60	0	0	0
308	0	40	0	0	0
309	100	60	0	0	0
310	100	40	0	0	0
311	100	100	0	40(60)	90(100)
312	100	0	0	0	10
313	100	20	0	0	0
314	100	0	0	0	0
315	100	0	0	20(40)	0
316	100	0	0	20	100
317	100	20	0	0	80(100)
318	100	20	0	0	90(100)
319	100	20	0	0	100
320	100	0	0	40	0
321	80	0	0	--	--
322	100	0	0	--	--
323	100	20	0	--	--
324	100	20	0	--	--
325	100	10	0	--	--
326	100	30	0	--	--
327	30	30	0	--	--

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
328	0	50	0	--	--
329	100	30	0	--	--
330	100	30	0	--	--
331	100	30	0	--	--
332	100	70	0	--	--
333	30	0	0	--	--
334	100	0	0	--	--
335	90	70	0	--	--
336	100	30	0	--	--
337	0	30	0	--	--
338	100	40	0	--	--
339	100	0	20(80)	--	--
340	100	0	0	--	--
341	100	100	0	--	--
342	100	0	0	--	--
343	100	10	20(60)	--	--
344	0	0	40	--	--
345	20	0	0	--	--
346	0	0	0	--	--
347	100	20	0	--	--
348	0	0	0	--	--
349	60	0	0	--	--
350	100	20	0	--	--
351	100	0	0	--	--
352	50	20	0	--	--
353	100	0	0	--	--
354	100	30	0	--	--
355	0	90	0	--	--
356	0	0	0	--	--
357	100	20	0	--	--

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
358	100	0	0	--	--
359	100	0	0	--	--
360	0	0	0	--	--
361	100	10	0	--	--
362	100	70	0	--	--
363	100	20	0	--	--
364	100	10	0	--	--
365	100	0	0	--	--
366	100	40	0	--	--
367	100	30	0	--	--
368	100	0	0	--	--
369	100	0	0	--	--
370	30	30	0	--	--
371	100	10	20	--	--
372	30	0	0	--	--
373	90	10	0	--	--
374	100	10	0	--	--
375	0	10	0	--	--
376	0	20	0	--	--
377	100	20	0	--	--
378	100	20	0	--	--
379	100	20	0	--	--
380	100	10	0	--	--
381	100	30	0	--	--
382	100	0	20	--	--
383	100	20	0	--	--
384	80	20	0	--	--
385	100	100	0	--	--
386	100	20	20	--	--
387	100	0	0	--	--

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
388	100	30	20(40)	--	--
389	0	70	0	--	--
390	100	30	0	--	--
391	100	0	20(60)	--	--
392	100	100	0	--	--
393	100	20	0	--	--
394	100	0	0	--	--
395	100	70	0	--	--
396	100	100	0	--	--
397	100	0	0	--	--
398	100	40	0	--	--
399	100	0	0	--	--
400	90	0	0	--	--
401	100	70	0	--	--
402	100	40	0	--	--
403	100	0	0	--	--
404	100	20	20(40)	--	--
405	100	10	0	--	--
406	100	0	20	--	--
407	100	20	0	--	--
408	90	60	0	--	--
409	40	0	0	--	--
410	100	90	0	--	--
411	100	10	0	--	--
412	30	30	0	--	--
413	100	10	0	--	--
414	60	50	40	--	--
415	60	20	20(60)	--	--
416	100	30	0	--	--
417	100	20	0	--	--

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
418	100	0	20	--	--
419	100	10	0	--	--
420	100	0	40	--	--
421	100	10	0	--	--
422	100	0	0	--	--
423	100	0	0	--	--
424	100	10	0	--	--
425	100	70	0	--	--
426	100	0	0	--	--
427	100	20	0	--	--
428	100	10	20(80)	--	--
429	100	20	0	--	--
430	100	0	0	--	--
431	90	40	0	--	--
432	100	20	0	--	--
433	100	0	0	--	--
434	100	10	20	--	--
435	100	20	0	--	--
436	0	30	0	--	--
437	100	10	0	--	--
438	100	40	0	--	--
439	100	0	0	--	--
440	100	20	0	--	--
441	100	20	0	--	--
442	100	30	0	--	--
443	100	20	0	--	--
444	100	0	0	--	--
445	100	20	0	--	--
446	100	20	20	--	--
447	100	20	0	--	--

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
418	100	0	20	--	--
419	100	10	0	--	--
420	100	0	40	--	--
421	100	10	0	--	--
422	100	0	0	--	--
423	100	0	0	--	--
424	100	10	0	--	--
425	100	70	0	--	--
426	100	0	0	--	--
427	100	20	0	--	--
428	100	10	20(80)	--	--
429	100	20	0	--	--
430	100	0	0	--	--
431	90	40	0	--	--
432	100	20	0	--	--
433	100	0	0	--	--
434	100	10	20	--	--
435	100	20	0	--	--
436	0	30	0	--	--
437	100	10	0	--	--
438	100	40	0	--	--
439	100	0	0	--	--
440	100	20	0	--	--
441	100	20	0	--	--
442	100	30	0	--	--
443	100	20	0	--	--
444	100	0	0	--	--
445	100	20	0	--	--
446	100	20	20	--	--
447	100	20	0	--	--

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
448	100	20	0	--	--
449	100	20	0	--	--
450	100	20	0	--	--
451	100	50	0	--	--
452	100	30	0	--	--
453	100	30	0	--	--
454	100	0	0	--	--
455	100	50	0	--	--
456	100	20	0	--	--
457	100	50	0	--	--
458	100	0	0	--	--
459	100	0	20	--	--
460	100	0	0	--	--
461	0	0	0	--	--
462	40	20	0	--	--
463	50	10	0	--	--
464	100	10	0	--	--
465	70	0	0	--	--
466	100	0	40	--	--
467	100	0	0	--	--
468	100	10	0	--	--
469	0	20	0	--	--
470	100	10	0	--	--
471	100	10	0	--	--
472	100	0	0	--	--
473	100	20	0	--	--
474	0	20	0	--	--
475	0	0	0	--	--
476	100	0	0	--	--
477	100	10	20	--	--

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
478	100	20	0	--	--
479	100	0	0	--	--
480	100	20	0	--	--
481	100	0	0	--	--
482	100	20	0	--	--
483	100	10	0	--	--
484	100	20	0	--	--
485	100	40	0	--	--
486	100	20	0	--	--
487	100	50	0	--	--
488	100	0	0	--	--
489	100	40	20	--	--
490	100	0	0	--	--
491	60	20	0	--	--
492	100	0	0	--	--
493	100	20	0	--	--
494	100	0	0	--	--
495	100	10	0	--	--
496	100	0	0	--	--
497	100	10	0	--	--
498	100	0	60(80)	--	--
499	100	40	0	--	--
500	100	10	0	--	--
501	100	30	0	--	--
502	100	10	20	--	--
503	90	30	0	--	--
504	100	40	0	--	--
505	100	30	20	--	--
506	100	0	0	--	--
507	60	20	0	--	--

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
508	100	0	0	--	--
509	100	70	0	--	--
510	100	10	0	--	--
511	100	10	0	--	--
512	90	20	0	--	--
513	100	10	0	--	--
514	100	30	0	--	--
515	100	100	0	--	--
516	100	10	0	--	--
517	100	10	0	--	--
518	100	30	0	--	--
519	100	10	0	--	--
520	100	30	0	--	--
521	100	50	0	--	--
522	100	10	0	--	--
523	100	10	0	--	--
524	90	30	0	--	--
525	100	30	0	--	--
526	100	10	0	--	--
527	100	0	0	--	--
528	100	0	0	--	--
529	100	10	0	--	--
530	100	10	0	--	--
531	100	10	0	--	--
532	100	20	0	--	--
533	100	0	0	--	--
534	100	10	0	--	--
535	100	0	0	--	--
536	100	10	0	--	--
537	100	0	0	--	--

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
538	100	20	0	--	--
539	100	0	0	--	--
540	100	10	0	--	--
541	100	0	0	--	--
542	100	0	0	--	--
543	100	0	0	--	--
544	100	0	0	--	--
545	100	0	0	--	--
546	100	0	0	--	--
547	100	0	0	--	--
548	100	30	20	--	--
549	100	30	0	--	--
550	100	40	0	--	--
551	100	0	0	--	--
552	100	30	20	--	--
553	100	40	0	--	--
554	100	20	0	--	--
555	100	20	0	--	--
556	100	10	0	--	--
557	30	30	0	--	--
558	100	20	0	--	--
559	100	50	0	--	--
560	90	0	0	--	--
561	100	30	20	--	--
562	100	0	0	--	--
563	100	10	0	--	--
564	100	0	0	--	--
565	100	0	0	--	--
566	40	70	0	--	--
567	100	40	20	--	--

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
568	100	0	0	--	--
569	100	20	0	--	--
570	100	10	0	--	--
571	100	50	0	--	--
572	100	80	0	--	--
573	100	20	0	--	--
574	100	0	0	--	--
575	100	0	20	--	--
576	100	20	0	--	--
577	100	0	0	--	--
578	100	40	0	--	--
579	100	40	0	--	--
580	100	0	0	--	--
581	100	0	0	--	--
582	100	0	0	--	--
583	100	30	0	--	--
584	100	0	0	--	--
585	100	0	0	--	--
586	100	0	0	--	--
587	100	10	0	--	--
588	100	40	0	--	--
589	100	40	0	--	--
590	100	30	0	--	--
591	100	0	0	--	--
592	100	40	0	--	--
593	100	40	0	--	--
594	100	10	0	--	--
595	100	10	20	--	--
596	100	80	0	--	--
597	100	40	0	--	--

Example No.	Foliar Application Test Species SAW	MBB	BW	Soil Application Test Species MBB	SAW
598	100	10	20	--	--
599	100	40	0	--	--
600	100	30	0	--	--
601	100	10	0	--	--
602	100	10	0	--	--
603	100	20	0	--	--
604	100	10	0	--	--
605	100	20	20(80)	--	--
606	0	20	0	--	--
607	80	10	0	--	--
608	100	30	0	--	--
609	100	20	0	--	--
610	0	20	0	--	--
611	30	30	0	--	--
612	0(30)[a]	20	0	--	--
613	0(70)[a]	50	0	--	--
614	10	20	0	--	--
615	100	20	0	--	--
616	100	0	0	--	--
617	100	10	0	--	--
618	100	10	0	--	--
619	100	0	0	--	--
620	70	30	20(40)	--	--
621				60(100)	100
622	100	70	0	0	20(50)
623	100	0	0	0	80(100
624	100	80	0		

Example No.	Foliar Application Test Species			Soil Application Test Species	
	SAW	MBB	BW	MBB	SAW
625	100	10	20	--	--
626	100	90	0	--	--
627	100	0	0	--	--
628	100	90	0	--	--
629	100	0	0	--	--
630	100	0	0	--	--
631	100	0	0	--	--
632	100	30	0	--	--
633	100	10	0	--	--
634	100	90	0	--	--

[a] 48 hour observation

[b] No data reported

Claims

1. An insecticidal composition comprising, as an insecticidally active ingredient, from 0.0001% to 99%, by weight of the composition, of a compound of the formula:

wherein

X and X' are the same or different O, S or NR;

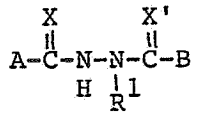
R' is unsubstituted (C_3-C_{10}) branched alkyl or (C_1-C_4) straight chain alkyl substituted with one or two of the same or different (C_3-C_6)cycloalkyl;

A and B are the same or different unsubstituted or substituted naphthyl where the substituents can be from one to three of the same or different halo; nitro; (C_1-C_4)alkoxy; (C_1-C_4)alkyl; or amino;

unsubstituted or substituted phenyl where the substituents can be from one to five of the same or different halo; nitro; cyano; hydroxy; (C_1-C_6)alkyl; halo(C_1-C_6)alkyl; cyano(C_1-C_6)alkyl; hydroxy (C_1-C_6)alkyl; (C_1-C_6)-alkoxy; halo(C_1-C_6)alkoxy; alkoxyalkyl having independently 1 to 6 carbon atoms in each alkyl group; alkoxyalkoxy having independently 1 to 6 carbon atoms in each alkyl group; -ORSR' group; -OCO_2R group; alkanoyloxyalkyl having independently 1 to 6 carbon atoms in each alkyl group; (C_2-C_6)alkenyl, optionally substituted with halo, cyano, (C_1-C_4)alkyl, or (C_1-C_4)alkoxy; (C_2-C_6)alkenyloxy; (C_2-C_6) alkenyl-carbonyl; (C_2-C_6)alkenyl-oxycarbonyl; (C_2-C_6)alkynyl optionally substituted with halo or (C_1-C_4)alkyl; -RCO_2R' group; -COR group; halo(C_1-C_6)alkyl-carbonyl; -CO_2R group; halo(C_1-C_6)alkoxy-carbonyl; -OCOR group; -$ORCO_2$R' group; -NRR' group; -CONRR' group; (C_2-C_6)alkenyl-carbonylamino; hydroxy(C_1-C_6)alkyl-aminocarbonyl; -OCONRR' group; -NRCOR' group; -$NRCO_2$R' group; thiocyanato; isothiocyanato; thiocyanato (C_1-C_6)alkyl; (C_1-C_6)alkyl-thio; -S(O)R group; -SO_2R group; -OSO_2R group; -SO_2NRR' group; -CSR group; -NRCSR' group; unsubstituted or substituted phenyl having one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4) alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group; phenoxy where the phenyl ring is unsubstituted or substituted with one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or NZZ' group; benzoyl where the

phenyl ring is unsubstituted or substituted with one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group; benzoyloxy(C_1-C_6)alkyl; phenylthio(C_1-C_6)alkyl where the phenyl ring is unsubstituted or substituted with one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group; -CR=N-R^2 group where R^2 is hydroxy, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, -NRR', phenylamino, -COR, or benzoyl; (C_2-C_6)oxiranyl; acetylthiosemicarbazone; pyrrolyl; oxazolyl, unsubstituted or substituted with one or two methyl groups; or when two adjacent positions on the phenyl ring are substituted with alkoxy groups, these groups may be joined to form, together with the carbon atoms to which they are attached, a 5 or 6 membered dioxolano or dioxano heterocyclic ring;
where R and R' are hydrogen or (C_1-C_6)alkyl, Z and Z' are (C_1-C_4)alkyl and "amino" means NRR'; and agronomically acceptable salts thereof;
and an agronomically acceptable diluent or carrier.

2. An insecticidal compound of the formula:



wherein
X and X' are the same or different O, S or NR;
R' is unsubstituted (C_3-C_{10}) branched alkyl or (C_1-C_4) straight chain alkyl substituted with one or two of the same or different (C_3-C_6)cycloalkyl;
A and B are the same or different unsubstituted or substituted naphthyl where the substituents can be from one to three of the same or different halo; nitro; (C_1-C_4)alkoxy; (C_1-C_4)alkyl; or amino;
unsubstituted or substituted phenyl where the substituents can be from one to five of the same or different halo; nitro; cyano; hydroxy; (C_1-C_6)alkyl; halo(C_1-C_6)alkyl; cyano(C_1-C_6)alkyl; hydroxy (C_1-C_6)alkyl; (C_1-C_6)-alkoxy; halo(C_1-C_6)alkoxy; alkoxyalkyl having independently 1 to 6 carbon atoms in each alkyl group; alkoxyalkoxy having independently 1 to 6 carbon atoms in each alkyl group; -ORSR' group; -OCO_2R group; alkanoyloxyalkyl having independently 1 to 6 carbon atoms in each alkyl group; (C_2-C_6) alkenyl, optionally substituted with halo, cyano, (C_1-C_4)alkyl, or (C_1-C_4)alkoxy; (C_2-C_6)alkenyloxy; (C_2-C_6)alkenyl-carbonyl; (C_2-C_6)-alkenyl-oxycarbonyl; (C_2-C_6)alkynyl optionally substituted with halo or (C_1-C_4)alkyl; -RCO_2R' group; -COR group; halo(C_1-C_6)alkyl-carbonyl; -CO_2R group; halo(C_1-C_6)alkoxy-carbonyl; -OCOR group; -$ORCO_2R'$ group; -NRR' group; -CONRR' group; (C_2-C_6)alkenyl-carbonylamino; hydroxy (C_1-C_6)alkyl-aminocarbonyl; -OCONRR' group; -NRCOR' group; -$NRCO_2R'$ group; thiocyanato; isothiocyanato; thiocyanato(C_1-C_6)alkyl; (C_1-C_6)alkyl-thio; -S(O)R group; -SO_2R group; -OSO_2R group; -SO_2NRR' group; -CSR group; -NRCSR' group; unsubstituted or substituted phenyl having one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group; phenoxy where the phenyl ring is unsubstituted or substituted with one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group; benzoyl where the phenyl ring is unsubstituted or substituted with one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group; benzoyloxy(C_1-C_6)alkyl; phenylthio(C_1-C_6)alkyl where the phenyl ring is unsubstituted or substituted with one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group; -CR=N-R^2 group where R^2 is hydroxy, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, -NRR', phenylamino, -COR, or benzoyl; (C_2-C_6)oxiranyl; acetylthiosemicarbazone; pyrrolyl; oxazolyl, unsubstituted or substituted with one or two methyl groups; or when two adjacent positions on the phenyl ring are substituted with alkoxy groups, these groups may be joined to form, together with the carbon atoms to which they are attached, a 5 or 6 membered dioxolano or dioxano heterocyclic ring;
where R and R' are hydrogen or (C_1-C_6)alkyl, Z and Z' are (C_1-C_4)alkyl and "amino" means NRR'; and agronomically acceptable salts thereof;
provided that when X and X' are O and A and B are unsubstituted phenyl, R' is not isopropyl (-$CH(CH_3)_2$); 2-methylpropyl (-$CH_2CH(CH_3)_2$); 3-methylbutyl (-$CH_2CH_2CH(CH_3)_2$); neopentyl (2,2-dimethylpropyl: -$CH_2C(CH_3)_3$); or cyclohexylmethyl (-$CH_2C_6H_{11}$) and further provided that when X and X' are O and R' is t-butyl (-$C(CH_3)_3$) and A is unsubstituted phenyl, B is not 4-nitrophenyl.

3. A composition or compound according to claim 1 or 2 in which
X, X' and R are as defined and
A and B are the same or different unsubstituted or substituted naphthyl
where the substituents can be from one to three of the same or different halo; nitro; (C_1-C_6)alkoxy; (C_1-C_4)-

alkyl; or amino;
unsubstituted or substituted phenyl where the substituents can be from one to five of the same or different halo; nitro; cyano; hydroxy; (C_1 to C_6)alkyl; halo(C_1 to C_6)alkyl; cyano(C_1 to C_6)alkyl; (C_1 to C_6)alkoxy; halo(C_1 to C_6)alkoxy; alkoxyalkyl having, independently, 1 to 6 carbon atoms in each alkyl group; alkoxyalkoxy having, independently, 1 to 6 carbon atoms in each alkyl group; -OCO_2R group; (C_2-C_6)alkenyl,
optionally substituted with halo, cyano; (C_1 to C_4)alkyl, or (C_1 to C_4)alkoxy; (C_2 to C_6)alkenyl-carbonyl; (C_2 to C_6)alkynyl,
optionally substituted with halo or (C_1 to C_4)alkyl;
-RCO_2R' group; -COR group; halo(C_1 to C_6)alkyl-carbonyl; -CO_2R group; halo(C_1 to C_6)alkoxyl-carbonyl; -OCOR group; -NRR' group; -CONRR' group; -OCONRR' group; -NRCOR' group; -$NRCO_2$R' group; thiocyanato; (C_1 to C_6)alkyl-thio; -S(O)R group; -SO_2R group; -OSO_2R group; -SO_2NRR' group; -CSR group; -NRCSR' group;
unsubstituted or substituted phenyl, where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group;
phenoxy where the phenyl ring is unsubstituted or substituted, where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group;
benzoyl where the phenyl ring is unsubstituted or substituted, where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group;
-CR = N-R^2 where R^2 is hydroxy, (C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, amino, phenylamino, -COR, or benzoyl; or, when two adjacent positions on the phenyl ring are substituted with alkoxy groups, these groups may be joined to form, together with the carbon atoms to which they are both attached, a 5 or 6 membered dioxolano or dioxano heterocyclic ring.

4. A composition or compound according to any preceding claim in which R' contains no more than 10 carbon atoms.

5. A composition or compound according to claim 1, 2 or 4 wherein:
X and X' are O or S;
R' is unsubstituted (C_3-C_8) branched alkyl or (C_1-C_4) straight chain alkyl substituted with one or two of the same or different (C_3-C_4)cycloalkyl;
A and B are the same or different unsubstituted naphthyl; or
unsubstituted or substituted phenyl where the substituents can be from one to three of the same or different halo; nitro; cyano; (C_1-C_4)alkyl; halo(C_1-C_4)alkyl; cyano(C_1-C_4)alkyl; (C_1-C_4)alkoxy; alkoxyalkyl having independently 1 to 4 carbon atoms in each alkyl group; -COD^4; carboxy; (C_1-C_4)alkoxy-carbonyl; (C_1-C_4)alkanoyl oxy; (C_2-C_6)alkenyl; (C_2-C_6)alkynyl; -ND^4D^5; thiocyanato; (C_1-C_4)alkylthio; -CSD^4; unsubstituted or substituted phenyl having one or two of the same or different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -ND^4D^5; phenoxy where the phenyl ring is unsubstituted or substituted with one or two of the same or different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -ND^4D^5; or when two adjacent positions on the phenyl ring are substituted with alkoxy groups, these groups may be joined, together with the carbon atoms to which they are attached, to form a 5-or 6-membered dioxolano or dioxano heterocyclic ring;
where D^4 and D^5 are hydrogen or (C_1-C_4)alkyl.

6. A composition or compound according to claim 1, 2, or 4 wherein:
X and X' are O or S;
R' is branched (C_3-C_8)alkyl;
A and B are the same or different unsubstituted naphthyl;
unsubstituted or substituted phenyl having one to three of the same of different halo; nitro; cyano; (C_1-C_4)-alkyl; halo(C_1-C_4)alkyl; cyano(C_1-C_4)alkyl; (C_1-C_4)alkoxy, alkoxyalkyl having independently 1 to 4 carbon atoms in each alkyl group; carbonyl (-COD^4); (C_1-C_4)alkoxy-carbonyl; (C_1-C_4)alkanoyloxy; thiocyanato; unsubstituted or substituted phenyl having one or two of the same or different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)-alkoxy, carboxy, -NH_2, -NHZ, -NZZ'; or phenoxy where the phenyl ring is unsubstituted or substituted with one or two of the same or different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2, -NHZ or -NZZ';
where D^4, Z and Z' are as defined in claims 5 and 3 respectively.

7. A composition or compound according to claim 1, 2 or 4 wherein:
X and X' are O;
R' is branched (C_4-C_7)alkyl; and
A and B are the same or different phenyl or substituted phenyl where the substituents can be from one to three of the same or different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, or halo(C_1-C_4)alkyl.

8. A composition or compound according to claim 1, 2 or 4 wherein:
X and X' are O;
R^1 is t-butyl, neopentyl (2,2-dimethylpropyl) or 1,2,2,-trimethylpropyl;
A and B are the same or different phenyl or substituted phenyl where the substituents can be one, two or three of the same or different chloro, fluoro, bromo, iodo, methyl, ethyl, methoxy or trifluoromethyl.

9. A composition or compound according to claim 1, 2 or 4 wherein:
X and X' are O;
R^1 is t-butyl; and
A and B accord to one of the following definitions:
A is 4-methylphenyl and B is 3,5-dimethylphenyl;
A is phenyl and B is phenyl;
A is 4-methylphenyl and B is 3-methylphenyl;
A is phenyl and B is 4-chlorophenyl;
A is 4-methylphenyl and B is 3,5-dimethylphenyl;
A is 2,3-dimethylphenyl and B is 3-methylphenyl;
A is 2,3-dimethylphenyl and B is 3,5-dimethylphenyl;
A is 2,3-dimethylphenyl and B is 2-bromophenyl;
A is 2,3-dimethylphenyl and B is 2,4-dichlorophenyl;
A is 2,3-dimethylphenyl and B is 2-chloro-5-methylphenyl;
A is phenyl and B is 2-bromophenyl;
A is phenyl and B is 3,4-dichlorophenyl;
A is 2-methyl-3-chlorophenyl and B is phenyl;
A is 2-methyl-3-chlorophenyl and B is 2,4-dichlorophenyl;
A is 2-methyl-3-bromophenyl and B is 2,4-dichlorophenyl;
A is 2-chloro-3-methylphenyl and B is 2,4-dichlorophenyl;
A is 2-chloro-3-methylphenyl and B is 3,5-dimethylphenyl;
A is 2,6-difluorophenyl and B is 3,4-dichlorophenyl;
A is 2,6-difluorophenyl and B is 2,4-dichlorophenyl;
A is 2,6-difluorophenyl and B is 3,5-dichlorophenyl;
A is 2-fluoro-6-chlorophenyl and B is 2,4-dichlorophenyl;
A is 2-chlorophenyl and B is 2,4-dichlorophenyl;
A is phenyl and B is 2,4-dichlorophenyl;
A is 2-methyl-3-chlorophenyl and B is 4-fluorophenyl;
A is 2-methyl-3-chlorophenyl and B is 2-bromophenyl;
A is 2-methyl-3-bromophenyl and B is 3-methylphenyl;
A is phenyl and B is 3-chloro-4-fluorophenyl;
A is 2-methyl-3-bromophenyl and B is 4-chlorophenyl;
or wherein:
X and X' are O;
R^1 is 1,2,2-trimethylpropyl;
A is 4-ethylphenyl or 2,3-dimethylphenyl; and
B is 3,5-dimethylphenyl.

10. A composition according to any of claims 1 and 3 to 9 wherein the active ingredient is present at from 0.01 to 75% by weight of the composition.

11. An insecticidal composition according to any of claims 1 and 3 to 10 in the form of an emulsifiable concentrate, a wettable powder, a flowable, a dust, granules or a bait.

12. A method of controlling insects which comprises contacting said insects with an insecticidally effective amount of active insecticidal compound as defined in claim 1 optionally in a composition according to any of claims 1 and 3 to 11.

13. A method according to claim 12 wherein said active insecticidal compound is applied to growing plants or an area where plants are to be grown at a dosage rate of from 10 grams to 10 kilograms per hectare.

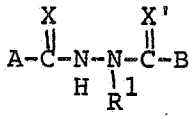
14. A method according to claim 13 wherein the rate of application is from 100 grams to 5 kilograms per hectare.

15. A method according to any of claims 12 to 14 of controlling insects from the order Lepidoptera or Coleoptera.

16. A method according to any of claims 12 to 15 wherein the application is carried out so as to allow root absorption and transport by plants.

Claims for contracting state : AT

1. An insecticidal composition comprising, an an insecticidally active ingredient, a compound of the formula:



wherein
X and X' are the same or different O, S or NR;
R' is unsubstituted (C_3-C_{10}) branched alkyl or (C_1-C_4) straight chain alkyl substituted with one or two of the same or different (C_3-C_6)cycloalkyl;
A and B are the same or different unsubstituted or substituted naphthyl where the substituents can be from one to three of the same or different halo; nitro; (C_1-C_4)alkoxy; (C_1-C_4)alkyl; or amino;
unsubstituted or substituted phenyl where the substituents can be from one to five of the same or different halo; nitro; cyano; hydroxy; (C_1-C_6)alkyl; halo(C_1-C_6)alkyl; cyano(C_1-C_6)alkyl; hydroxy (C_1-C_6)alkyl; (C_1-C_6)-alkoxy; halo(C_1-C_6)alkoxy; alkoxyalkyl having independently 1 to 6 carbon atoms in each alkyl group; alkoxyalkoxy having independently 1 to 6 carbon atoms in each alkyl group; -ORSR' group; -OCO_2R group; alkanoyloxyalkyl having independently 1 to 6 carbon atoms in each alkyl group; (C_2-C_6)alkenyl, optionally substituted with halo, cyano, (C_1-C_4)alkyl, or (C_1-C_4)alkoxy; (C_2-C_6)alkenyloxy; (C_2-C_6) alkenyl-carbonyl; (C_2-C_6)alkenyl-oxycarbonyl; (C_2-C_6)alkynyl optionally substituted with halo or (C_1-C_4)alkyl; -RCO_2R' group; -COR group; halo(C_1-C_6)alkyl-carbonyl; -CO_2R group; halo(C_1-C_6)alkoxy-carbonyl; -OCOR group; -$ORCO_2$R' group; -NRR' group; -CONRR' group; (C_2-C_6)alkenyl-carbonylamino; hydroxy(C_1-C_6)alkyl-aminocarbonyl; -OCONRR' group; -NRCOR' group; -$NRCO_2$R' group; thiocyanato; isothiocyanato; thiocyanato (C_1-C_6)alkyl; (C_1-C_6)alkyl-thio; -S(O)R group; -SO_2R group; -OSO_2R group; -SO_2NRR' group; -CSR group; -NRCSR' group; unsubstituted or substituted phenyl having one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group; phenoxy where the phenyl ring is unsubstituted or substituted with one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group; benzoyl where the phenyl ring is unsubstituted or substituted with one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group; benzoyloxy(C_1-C_6)alkyl; phenylthio(C_1-C_6)alkyl where the phenyl ring is unsubstituted or substituted with one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group; -CR=N-R^2 group where R^2 is hydroxy, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, -NRR', phenylamino, -COR, or benzoyl; (C_2-C_6)oxiranyl; acetylthiosemicarbazone; pyrrolyl; oxazolyl, unsubstituted or substituted with one or two methyl groups; or when two adjacent positions on the phenyl ring are substituted with alkoxy groups, these groups may be joined to form, together with the carbon atoms to which they are attached, a 5 or 6 membered dioxolano or dioxano heterocyclic ring;
where R and R' are hydrogen or (C_1-C_6)alkyl, Z and Z' are (C_1-C_4)alkyl and "amino" means NRR'; and agronomically acceptable salts thereof;
and an agronomically acceptable diluent or carrier.

2. An insecticidal composition according to claim 1 wherein, in the insecticidally active ingredient, when X and X' are O and A and B are unsubstituted phenyl, R' is not isopropyl (-$CH(CH_3)_2$); 2-methylpropyl (-$CH_2CH(CH_3)_2$); 3-methylbutyl (-$CH_2CH_2CH(CH_3)_2$); neopentyl (2,2-dimethylpropyl: -$CH_2C(CH_3)_3$); or cyclohexyl-methyl (-$CH_2C_6H_{11}$) and further provided that when X and X' are O and R' is t-butyl (-$C(CH_3)_3$) and A is unsubstituted phenyl, B is not 4-nitrophenyl.

3. A composition according to claim 1 or 2 in which X, X' and R are as defined and
A and B are the same or different unsubstituted or substituted naphthyl
where the substituents can be from one to three of the same or different halo; nitro; (C_1-C_4)alkoxy; (C_1-C_4)-alkyl; or amino;
unsubstituted or substituted phenyl where the substituents can be from one to five of the same or different halo; nitro; cyano; hydroxy; (C_1 to C_6)alkyl; halo(C_1 to C_6)alkyl; cyano(C_1 to C_6)alkyl; (C_1 to C_6)alkoxy; halo(C_1 to C_6)alkoxy; alkoxyalkyl having, independently, 1 to 6 carbon atoms in each alkyl group; alkoxyalkoxy having, independently, 1 to 6 carbon atoms in each alkyl group; -OCO_2R group; (C_2-C_6)alkenyl,

optionally substituted with halo, cyano; (C_1 to C_4)alkyl, or (C_1 to C_4)alkoxy; (C_2 to C_6)alkenyl-carbonyl; (C_2 to C_6)alkynyl,

optionally substituted with halo or (C_1 to C_6)alkyl;

-RCO_2R' group; -COR group; halo(C_1 to C_6)alkyl-carbonyl; -CO_2R group; halo(C_1 to C_6)alkoxy-carbonyl; -OCOR group; -NRR' group; -CONRR' group; -OCONRR' group; -NRCOR' group; -$NRCO_2R'$ group; thiocyanato; (C_1 to C_6)alkyl-thio; -S(O)R group; -SO_2R group; -OSO_2R group; -SO_2NRR' group; -CSR group; -NRCSR' group;

unsubstituted or substituted phenyl, where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group;

phenoxy where the phenyl ring is unsubstituted or substituted, where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group;

benzoyl where the phenyl ring is unsubstituted or substituted, where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group;

-$CR=N-R^2$ where R^2 is hydroxy, (C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, amino, phenylamino, -COR, or benzoyl; or, when two adjacent positions on the phenyl ring are substituted with alkoxy groups, these groups may be joined to form, together with the carbon atoms to which they are both attached, a 5 or 6 membered dioxolano or dioxano heterocyclic ring.

4. A composition according to any preceding claim in which R^1 contains no more than 10 carbon atoms.

5. A composition according to claim 1, 2 or 4 wherein:

X and X' are O or S;

R^1 is unsubstituted (C_3-C_8)branched alkyl or (C_1-C_4) straight chain alkyl substituted with one or two or the same or different (C_3-C_4)cycloalkyl;

A and B are the same or different unsubstituted naphthyl; or

unsubstituted or substituted phenyl where the substituents can be from one to three of the same or different halo; nitro; cyano; (C_1-C_4)alkyl; halo(C_1-C_4)alkyl; cyano(C_1-C_4)alkyl; (C_1-C_4)alkoxy; alkoxyalkyl having independently 1 to 4 carbon atoms in each alkyl group; -COD^4; carboxy; (C_1-C_4)alkoxy-carbonyl; (C_1-C_4)alkanoyl oxy; (C_2-C_6)alkenyl; (C_2-C_6)alkynyl; -ND^4D^5; thiocyanato; (C_1-C_4)alkylthio; -CSD^4; unsubstituted or substituted phenyl having one or two of the same of different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -ND^4D^5; phenoxy where the phenyl ring is unsubstituted or substituted with one or two of the same or different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -ND^4D^5; or when two adjacent positions on the phenyl ring are substituted with alkoxy groups, these groups may be joined, together with the carbon atoms to which they are attached, to form a 5-or 6-membered dioxolano or dioxano heterocyclic ring;

where D^4 and D^5 are hydrogen or (C_1-C_4)alkyl.

6. A composition according to claim 1, 2 or 4 wherein:

X and X' are O and S;

R^1 is branched (C_3-C_8)alkyl;

A and B are the same or different unsubstituted naphthyl;

unsubstituted or substituted phenyl having one to three of the same of different halo; nitro; cyano; (C_1-C_4)-alkyl; halo(C_1-C_4)alkyl; cyano(C_1-C_4)alkyl; (C_1-C_4)alkoxy, alkoxyalkyl having independently 1 to 4 carbon atoms in each alkyl group; carbonyl (-COD^4); (C_1-C_4)alkoxy-carbonyl; (C_1-C_4)alkanoyloxy; thiocyanato; unsubstituted or substituted phenyl having one or two of the same or different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)-alkoxy, carboxy, -NH_2, -NHZ, -NZZ'; or phenoxy where the phenyl ring is unsubstituted or substituted with one or two of the same or different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2, -NHZ or -NZZ'; where D^4, Z and Z' are ad defined in claims 5 and 3 respectively.

7. A composition according to claim 1, 2 or 4 wherein:

X and X' are O;

R^1 is branched (C_4-C_7)alkyl; and

A and B are the same or different phenyl or substituted phenyl where the substituents can be from one to three of the same or different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, or halo(C_1-C_4)alkyl.

8. A composition according to claim 1, 2 or 4 wherein:

X and X' are O;

R^1 is t-butyl, neopentyl (2,2-dimethylpropyl) or 1,2,2,-trimethylpropyl;

A and B are the same or different phenyl or substituted phenyl where the substituents can be one, two or three of the same or different chloro, fluoro, bromo, iodo, methyl, ethyl, methoxy or trifluoromethyl.

9. A composition according to claim 1, 2 or 4 wherein:
X and X' are O;
R' is t-butyl; and
A and B accord to one of the following definitions:
A is 4-methylphenyl and B is 3,5-dimethylphenyl;
A is phenyl and B is phenyl;
A is 4-methylphenyl and B is 3-methylphenyl;
A is phenyl and B is 4-chlorophenyl;
A is 4-methylphenyl and B is 3,5-dimethylphenyl;
A is 2,3-dimethylphenyl and B is 3-methylphenyl;
A is 2,3-dimethylphenyl and B is 3,5-dimethylphenyl;
A is 2,3-dimethylphenyl and B is 2-bromophenyl;
A is 2,3-dimethylphenyl and B is 2,4-dichlorophenyl;
A is 2,3-dimethylphenyl and B is 2-chloro-5-methylphenyl;
A is phenyl and B is 2-bromophenyl;
A is phenyl and B is 3,4-dichlorophenyl;
A is 2-methyl-3-chlorophenyl and B is phenyl;
A is 2-methyl-3-chlorophenyl and B is 2,4-dichlorophenyl;
A is 2-methyl-3-bromophenyl and B is 2,4-dichlorophenyl;
A is 2-chloro-3-methylphenyl and B is 2,4-dichlorophenyl;
A is 2-chloro-3-methylphenyl and B is 3,5-dimethylphenyl;
A is 2,6-difluorophenyl and B is 3,4-dichlorophenyl;
A is 2,6-difluorophenyl and B is 2,4-dichlorophenyl;
A is 2,6-difluorophenyl and B is 3,5-dichlorophenyl;
A is 2-fluoro-6-chlorophenyl and B is 2,4-dichlorophenyl;
A is 2-chlorophenyl and B is 2,4-dichlorophenyl;
A is phenyl and B is 2,4-dichlorophenyl;
A is 2-methyl-3-chlorophenyl and B is 4-fluorophenyl;
A is 2-methyl-3-chlorophenyl and B is 2-bromophenyl;
A is 2-methyl-3-bromophenyl and B is 3-methylphenyl;
A is phenyl and B is 3-chloro-4-fluorophenyl;
A is 2-methyl-3-bromophenyl and B is 4-chlorophenyl;
or wherein:
X and X' are O;
R' is 1,2,2-trimethylpropyl;
A is 4-ethylphenyl or 2,3-dimethylphenyl; and
B is 3,5-dimethylphenyl.

10. A composition according to any preceding claim wherein the active ingredient is present at from 0.01 to 75% by weight of the composition.

11. An insecticidal composition according to any preceding claim in the form of an emulsifiable concentrate, a wettable powder, a flowable, a dust, granules or a bait.

12. A process of controlling insects which comprises contacting said insects with an insecticidally effective amount of active insecticidal compound as defined in claim 1 optionally in a composition according to any preceding claim.

13. A process according to claim 12 wherein said active insecticidal compound is applied to growing plants or an area where plants are to be grown at a dosage rate of from 10 grams to 10 kilograms per hectare.

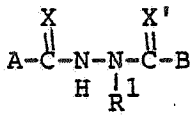
14. A process according to claim 13 wherein the rate of application is from 100 grams to 5 kilograms per hectare.

15. A process according to any of claims 12 to 14 of controlling insects from the order Lepidoptera or Coleoptera.

16. A process according to any of claims 12 to 15 wherein the application is carried out so as to allow root absorption and transport by plants.

Claims for contracting state : ES

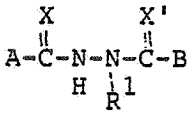
1. A process for improving the commercial value and/or profitability of vendible crops from plants whose growth is affected or likely to be affected by insects and/or improving that growth comprising (1) charging to a container, fumigation device or mechanical dissemination device an insecticidal composition comprising, as an insecticidally active ingredient, from 0.0001% to 99%, by weight of the composition, of a compound of the formula:



wherein
X and X' are the same or different O, S or NR;
R' is unsubstituted (C_3-C_{10}) branched alkyl or (C_1-C_4) straight chain alkyl substituted with one or two of the same or different (C_3-C_6)cycloalkyl;
A and B are the same or different unsubstituted or substituted naphthyl where the substituents can be from one to three of the same or different halo; nitro; (C_1-C_4)alkoxy; (C_1-C_4)alkyl; or amino;
unsubstituted or substituted phenyl where the substituents can be from one to five of the same or different halo; nitro; cyano; hydroxy; (C_1-C_6)alkyl; halo(C_1-C_6)alkyl; cyano(C_1-C_6)alkyl; hydroxy (C_1-C_6)alkyl; (C_1-C_6)-alkoxy; halo(C_1-C_6)alkoxy; alkoxyalkyl having independently 1 to 6 carbon atoms in each alkyl group; alkoxyalkoxy having independently 1 to 6 carbon atoms in each alkyl group; -ORSR' group; -OCO_2R group; alkanoyl oxyalkyl having independently 1 to 6 carbon atoms in each alkyl group; (C_2-C_6)alkenyl, optionally substituted with halo, cyano, (C_1-C_4)alkyl, or (C_1-C_4)alkoxy; (C_2-C_6)alkenyloxy; (C_2-C_6)alkenyl-carbonyl; (C_2-C_6)-alkenyl-oxycarbonyl; (C_2-C_6)alkynyl optionally substituted with halo or (C_1-C_4)alkyl; -RCO_2R' group; -COR group; halo(C_1-C_6)alkyl-carbonyl; -CO_2R group; halo(C_1-C_6)alkoxy-carbonyl; -OCOR group; -$ORCO_2$R' group; -NRR' group; -CONRR' group; (C_2-C_6)alkenyl-carbonylamino; hydroxy(C_1-C_6)alkyl-aminocarbonyl; -OCONRR' group; -NRCOR' group; -$NRCO_2$R' group; thiocyanato; isothiocyanato; thiocyanato (C_1-C_6)alkyl; (C_1-C_6)alkyl-thio; -S(O)R group; -SO_2R group; -OSO_2R group; -SO_2NRR' group; -CSR group; -NRCSR' group; unsubstituted or substituted phenyl having one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4) alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group; phenoxy where the phenyl ring is unsubstituted or substituted with one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group; benzoyl where the phenyl ring is unsubstituted or substituted with one to three of the same or different halo, cyano, nitro, -(C_1-C_4)alkyl, halo(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group; benzoyloxy-(C_1-C_6)alkyl; phenylthio(C_1-C_6)alkyl where the phenyl ring is unsubstituted or substituted with one to three of the same or different halo, cyano, nitro, (C_1-C_4)alkyl, halo(C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group; -CR=N-R^2 group where R^2 is hydroxy, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, -NRR', phenylamino, -COR, or benzoyl; (C_2-C_6)oxiranyl; acetylthiosemicarbazone; pyrrolyl; oxazolyl, unsubstituted or substituted with one or two methyl groups; or when two adjacent positions on the phenyl ring are substituted with alkoxy groups, these groups may be joined to form, together with the carbon atoms to which they are attached, a 5 or 6 membered dioxolano or dioxano heterocyclic ring;
where R and R' are hydrogen or (C_1-C_6)alkyl, Z and Z' are (C_1-C_4)alkyl and "amino" means NRR'; and agronomically acceptable salts thereof;
and an agronomically acceptable diluent or carrier, (2) using the container, fumigator or mechanical dissemination device to apply the insecticidal composition, in the form of granules, dust, smoke, vapour or surfactant-containing liquid preparation to growing plants or to a growth medium where the plants are growing or are to be grown, or to the insects themselves, (3) controlling the dose of the active ingredient during this application step so that the rate of application of active insecticidal compound is sufficient to combat the insects but is insufficient to cause an unacceptably adverse effect on the crop plants growing or to be grown in the treated area.

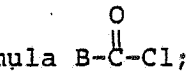
2. A dissemination process according to claim 1 wherein, in the insecticidal compound, when X and X' are O and A and B are unsubstituted phenyl, R' is not isopropyl (-$CH(CH_3)_2$); 2-methylpropyl (-$CH_2CH(CH_3)_2$); 3-methylbutyl (-$CH_2CH_2CH(CH_3)_2$); neopentyl (2,2-dimethylpropyl: -$CH_2C(CH_3)_3$); or cyclohexylmethyl (-$CH_2C_6H_{11}$) and further provided that when X and X' are O and R' is t-butyl (-$C(CH_3)_2$) and A is unsubstituted phenyl, B is not 4-nitrophenyl.

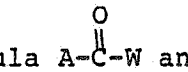
3. A process for the preparation of an insecticidally active compound of the formula

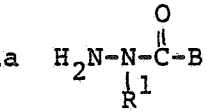


wherein X, X', R', A and B are as defined in claim 1 as limited by claim 2, which comprises reacting a first reactant (I) containing the substituent A with a second reactant (II) containing the substituent B in the presence of base and solvent, wherein, when X and X' are both O,

(a) reactant I is of the formula  and

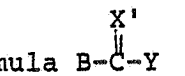
reactant II is of the formula  ; or

(b) reactant I is of the formula  and

reactant II is of the formula 

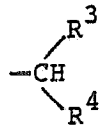
wherein W is a good leaving group; or wherein, when at least one of X and X' is S,

(c) reactant I is of the formula  and

reactant II is of the formula 

wherein Y is a good leaving group.

4. A preparation process according to claim 3 wherein, in reaction (a), R' is a group of the formula



wherein R^3 and R^4 are the same or different hydrogen or (C_3 to C_9) unsubstituted branched chain alkyl or (C_1 to C_9) unsubstituted straight chain alkyl or (C_3 to C_6) cycloalkyl or (C_1 to C_3) straight chain alkyl substituted by one or two (C_3 to C_6) cycloalkyl; or, in reaction (b) W is -Cl.

5. A dissemination or preparation process according to any preceding claim in which
X, X', and R are as defined and
A and B are the same or different unsubstituted or substituted naphthyl where the substituents can be from one to three of the same or different halo; nitro; (C_1-C_4)alkoxy; (C_1-C_4)alkyl; or amino;
unsubstituted or substituted phenyl where the substituents can be from one to five of the same or different halo; nitro; cyano; hydroxy; (C_1 to C_6)alkyl; halo(C_1 to C_6)alkyl; cyano(C_1 to C_6)alkyl; (C_1 to C_6)alkoxy; halo(C_1 to C_6) alkoxy; alkoxyalkyl having, independently, 1 to 6 carbon atoms in each alkyl group; alkoxyalkoxy having, independently, 1 to 6 carbon atoms in each alkyl group; -OCO_2R group; (C_2-C_6)alkenyl,
optionally substituted with halo, cyano;
(C_1 to C_4)alkyl, or (C_1 to C_4)alkoxy; (C_2 to C_6)alkenyl-carbonyl; (C_2 to C_6)alkynyl,
optionally substituted with halo or (C_1 to C_4)alkyl;
-RCO_2R' group; -COR group; halo(C_1 to C_6)alkyl-carbonyl; -CO_2R group; halo (C_1 to C_6)alkoxy-carbonyl; -OCOR group; -NRR' group; -CONRR' group; -OCONRR' group; -NRCOR' group; -$NRCO_2$R' group; thiocyanato; (C_1 to C_6) alkyl-thio; -S(O)R group; -SO_2R group; -OSO_2R group; -SO_2NRR' group; -CSR group;

-NRCSR' group;
unsubstituted or substituted phenyl,
where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ'; group;
phenoxy where the phenyl ring is unsubstituted or substituted,
where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1 to C_4) alkyl, (C_1 to C_4) alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group;
benzoyl where the phenyl ring is unsubstituted or substituted,
where the substituents can be one to three of the same or different halo, cyano, nitro, (C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, carboxy, -NH_2 group, -NHZ group or -NZZ' group;
-CR=N-R^2 where R^2 is hydroxy, (C_1 to C_4)alkyl, (C_1 to C_4)alkoxy, amino, phenylamino, -COR, or benzoyl; or, when two adjacent positions on the phenyl ring are substituted with alkoxy groups, these groups may be joined to form, together with the carbon atoms to which they are both attached, a 5 or 6 membered dioxolano or dioxano heterocyclic ring.

6. A dissemination or preparation process according to any preceding claim in which R' contains no more than 10 carbon atoms.

7. A dissemination or preparation process according to any of claims 1 to 4 and 6 wherein:
X and X' are O or S;
R^1 is unsubstituted (C_3-C_8)branched alkyl or (C_1-C_6) straight chain alkyl substituted with one or two of the same or different (C_3-C_4)cycloalkyl;
A and B are the same or different unsubstituted naphthyl; or
unsubstituted or substituted phenyl where the substituents can be from one to three of the same or different halo; nitro; cyano; (C_1-C_4)alkyl; halo(C_1-C_4)alkyl; cyano(C_1-C_4)alkyl; (C_1-C_4)alkoxy; alkoxyalkyl having independently 1 to 4 carbon atoms in each alkyl group; -COD^4; carboxy; (C_1-C_4)alkoxy-carbonyl; (C_1-C_4)alkanoyloxy; (C_2-C_6)alkenyl; (C_2-C_6)alkynyl; -ND^4D^5; thiocyanato; (C_1-C_4)alkylthio; -CSD^4; unsubstituted or substituted phenyl having one or two of the same or different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -ND^4D^5; phenoxy where the phenyl ring is unsubstituted or substituted with one or two of the same or different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -ND^4D^5; or when two adjacent positions on the phenyl ring are substituted with alkoxy groups, these groups may be joined, together with the carbon atoms to which they are attached, to form a 5-or 6-membered dioxolano or dioxano heterocyclic ring;
where D^4 and D^5 are hydrogen or (C_1-C_4)alkyl.

8. A dissemination or preparation process according to any of claims 1 to 4 and 6 wherein:
X and X' are O or S;
R^1 is branched (C_3-C_8)alkyl;
A and B are the same or different unsubstituted naphthyl;
unsubstituted or substituted phenyl having one to three of the same or different halo; nitro; cyano; (C_1-C_4)-alkyl; halo(C_1-C_4)alkyl; cyano(C_1-C_4)alkyl; (C_1-C_4)alkoxy, alkoxyalkyl having independently 1 to 4 carbon atoms in each alkyl group; carbonyl (-COD^4); (C_1-C_4)alkoxy-carbonyl; (C_1-C_4)alkanoyloxy; thiocyanato; unsubstituted or substituted phenyl having one or two of the same or different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)-alkoxy, carboxy, -NH_2, -NHZ, -NZZ'; or phenoxy where the phenyl ring is unsubstituted or substituted with one or two of the same or different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, carboxy, -NH_2, -NHZ or -NZZ';
where D^4, Z and Z' are as defined in claims 5 and 3 respectively.

9. A dissemination or preparation process according to any of claims 1 to 4 and 6 wherein:
X and X' are O;
R^1 is branched (C_4-C_7)alkyl; and
A and B are the same or different phenyl or substituted phenyl where the substituents can be from one to three of the same or different halo, nitro, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, or halo(C_1-C_4)alkyl.

10. A dissemination or preparation process according to any of claims 1 to 4 and 6 wherein:
X and X' are O;
R^1 is t-butyl, neopentyl (2,2-dimethylpropyl) or 1,2,2,-trimethylpropyl;
A and B are the same or different phenyl or substituted phenyl where the substituents can be one, two or three of the same or different chloro, fluoro, bromo, iodo, methyl, ethyl, methoxy or trifluoromethyl.

11. A dissemination or preparation process according to any of claims 1 to 4 and 6 wherein:
X and X' are O;
R^1 is t-butyl; and
A and B accord to one of the following definitions:
A is 4-methylphenyl and B is 3,5-dimethylphenyl;
A is phenyl and B is phenyl;

A is 4-methylphenyl and B is 3-methylphenyl;
A is phenyl and B is 4-chlorophenyl;
A is 4-methylphenyl and B is 3,5-dimethylphenyl;
A is 2,3-dimethylphenyl and B is 3-methylphenyl;
A is 2,3-dimethylphenyl and B is 3,5-dimethylphenyl;
A is 2,3-dimethylphenyl and B is 2-bromophenyl;
A is 2,3-dimethylphenyl and B is 2,4-dichlorophenyl;
A is 2,3-dimethylphenyl and B is 2-chloro-5-methylphenyl;
A is phenyl and B is 2-bromophenyl;
A is phenyl and B is 3,4-dichlorophenyl;
A is 2-methyl-3-chlorophenyl and B is phenyl;
A is 2-methyl-3-chlorophenyl and B is 2,4-dichlorophenyl;
A is 2-methyl-3-bromophenyl and B is 2,4-dichlorophenyl;
A is 2-chloro-3-methylphenyl and B is 2,4-dichlorophenyl;
A is 2-chloro-3-methylphenyl and B is 3,5-dimethylphenyl;
A is 2,6-difluorophenyl and B is 3,4-dichlorophenyl;
A is 2,6-difluorophenyl and B is 2,4-dichlorophenyl;
A is 2,6-difluorophenyl and B is 3,5-dichlorophenyl;
A is 2-fluoro-6-chlorophenyl and B is 2,4-dichlorophenyl;
A is 2-chlorophenyl and B is 2,4-dichlorophenyl;
A is phenyl and B is 2,4-dichlorophenyl;
A is 2-methyl-3-chlorophenyl and B is 4-fluorophenyl;
A is 2-methyl-3-chlorophenyl and B is 2-bromophenyl;
A is 2-methyl-3-bromophenyl and B is 3-methylphenyl;
A is phenyl and B is 3-chloro-4-fluorophenyl;
A is 2-methyl-3-bromophenyl and B is 4-chlorophenyl;
or wherein:
X and X' are O;
R' is 1,2,2-trimethylpropyl;
A is 4-ethylphenyl or 2,3-dimethylphenyl; and B is 3,5-dimethylphenyl.

12. A dissemination process according to any of claims 1, 2 and 5 to 11 wherein the active ingredient is present in the composition at from 0.01 to 75% by weight of the composition.

13. A dissemination process according to any of claims 1, 2 and 5 to 12 wherein the composition is used in the form of an emulsifiable concentrate, a wettable powder, a flowable, a dust, granules or a bait.

14. A dissemination process according to any of claims 1, 2 and 5 to 13 wherein said active insecticidal compound is applied in step 2 to growing plants or an area where plants are to be grown and in step 3 the dosage rate is controlled at from 10 grams to 10 kilograms per hectare.

15. A dissemination process according to any of claims 1, 2 and 5 to 14 wherein in step 3 the dosage is controlled at a rate of application from 100 grams to 5 kilograms per hectare.

16. A dissemination process according to any of claims 1,2 and 5 to 15 wherein the insects are from the order Lepidoptera or Coleoptera.